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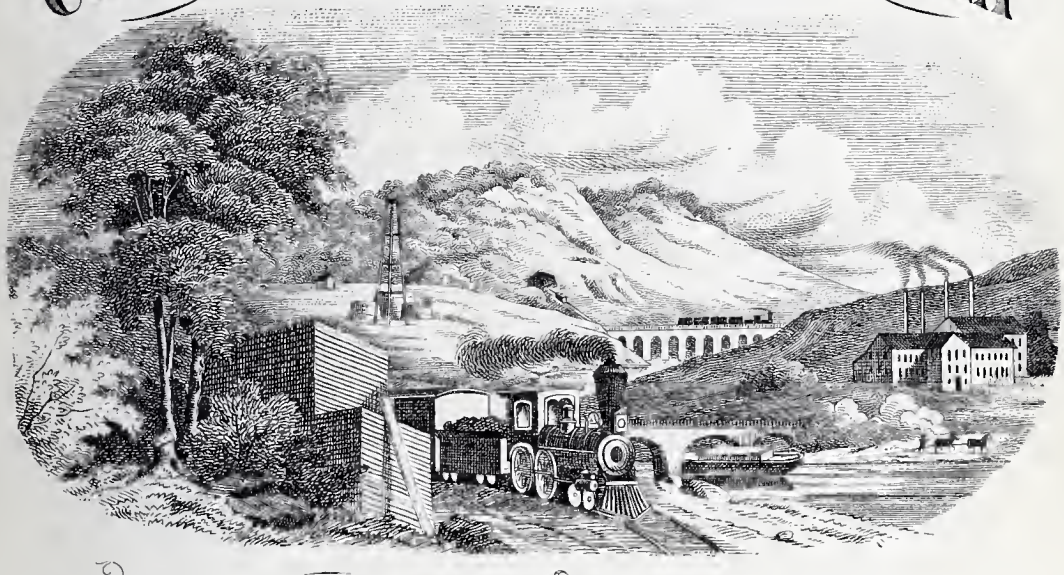
ANNUAL REPORT

OF THE

Secretary of Internal Affairs

OF THE

COMMONWEALTH OF PENNSYLVANIA



PART III.

INDUSTRIAL STATISTICS.

VOL XV

1887.

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REPORT

OF THE

BUREAU OF INDUSTRIAL STATISTICS.

COMMUNICATION.

DEPARTMENT OF INTERNAL AFFAIRS,
HARRISBURG, *May 29, 1888.*

To His Excellency JAMES A. BEAVER,
Governor of the Commonwealth of Pennsylvania:

SIR: In compliance with the requirements of the Constitution, I have the honor to submit herewith for transmission to the General Assembly the Fifteenth Annual Report of the Bureau of Industrial Statistics, the same being Part III of Report of this Department for the year ending November 30, 1887.

I am very respectfully,
Your obedient servant,
THOMAS J. STEWART,
Secretary of Internal Affairs.

181902

LETTER OF TRANSMITTAL.

Department of Internal Affairs,
Bureau of Industrial Statistics,
Harrisburg, *May 1, 1888.*

Honorable Thomas J. Stewart, *Secretary of Internal Affairs of the Commonwealth of Pennsylvania:*

Sir: I have the honor to present herewith the Fifteenth Annual Report of the Bureau of Industrial Statistics.

The first inquiry undertaken by this Bureau was to ascertain what assistance was rendered by employers whenever their employés were overtaken by accident, sickness or otherwise disabled for work. The result of the inquiry is embodied in the first chapter of the Report. The returns in some cases were very satisfactory, nevertheless many persons, firms and corporations to whom the letter of inquiry was sent, paid but little attention to it. Interesting and valuable as this information is, I am confident that much more might have been given.

Another inquiry was undertaken relating to hours of labor, the wages paid and quantity of production, which, in some respects, was similar to an inquiry by my predecessor. Fewer questions, however, were asked, nor were any of these objectionable save the length of time required to answer three of them by the large employers of labor. It may be also remarked that in the letter accompanying the blank the provision of the law requiring an answer was plainly stated. The reading of this letter ought to convince anyone that this Bureau has used all the power it possesses for getting information concerning wages and production. Yet the results of the inquiry thus carefully conducted have been pretty nearly a failure. I do not confess to disappointment; on the other hand I expected nothing better. The truth is the blank system of getting information, and especially of this nature, is entirely antiquated, and in the State where a bureau has been longest established, has been abandoned. What could be simpler in the way of a letter than the one first mentioned, relating to the alleviation of distress? and what, too, could have been sent to the manufacturers which they would have been more willing to answer, especially those (and which we believe constituted by far the greater number) who, in some form or other, have rendered assistance to their workingmen? Nevertheless in many cases the blank was misunderstood and was an unwelcome messenger. Our conclusion, there-

fore, is if statistics are desired concerning the earnings, cost of living, production and other matters connected therewith, the only rational method is to appropriate a sufficient sum for employing several commissioners who shall be constantly engaged in collecting them. Considering the value of full and accurate statistics on these subjects, the small sum needful to collect this information is insignificant. In our judgment the expenditure would be fully justified by the fruits which such investigation would yield.

As there are not means enough to conduct any extended statistical inquiry from which satisfactory results can be obtained, other inquiries and investigations pertaining to the employment of labor have been undertaken which, it is hoped, possess both interest and value. "The History of the Knights of Labor" was prepared at the request of the Bureau by Mr. John L. Butler, a member of that body; and "The Amalgamated Association of Iron and Steel Workers," by Mr. Charles G. Foster, editor of the *National Labor Tribune*, the organ of that association, had a similar origin. Much has been written concerning these organizations by persons not members, and it was thought that an account by persons intimately connected and in good standing with them would be worth giving. "The Employment of Labor in the Connellsville Coke Region," by Mr. Edward B. McCormick, is believed to be a valuable addition to the history of labor in the State. Descriptions also have been written of two of the industrial establishments of the State. The first, of the Cambria Iron Company, was prepared by Mr. John N. Boucher, an assistant in this Bureau. The other is the result of my own inquiry and study. These will be followed by similar descriptions in subsequent reports. They are not complete and relate more especially to the treatment of employés, their wages, earnings and other matters that most deeply concern them. Another reason, though secondary, was to give persons outside the State a better knowledge of some of the great industrial enterprises that exist here. For the most part the owners and managers, either through modesty or indifference, have not done much in this way, and consequently the industrial history of no State probably is so imperfectly understood as that of Pennsylvania. Regarded in its entirety this history is most honorable and should be given to the world. Something has been attempted here, enough to show the importance of doing far more.

It is fitting, also, to express in this place my thanks to Messrs. Thomas Wilson, John N. Boucher and J. M. Clark for their faithful assistance in preparing this Report.

ALBERT S. BOLLES,
Chief of Bureau.

ALLEVIATION OF DISTRESS AMONG WORKINGMEN.

Last September, the following letter was sent to all of the larger manufacturers in the State :

"This office is desirous of finding out what arrangements exist among the employers of labor for aiding their employés in times of distress, occasioned by sickness or accident. The inquiry is intended to be very general, and to include all the manufacturers, railroad companies and other employers of labor in the State. From inquiries already made, I have learned that some employers have established arrangements for furnishing such assistance; others contribute in a less regular manner, while others contribute nothing, either because they think that to do so would render their employés less self-reliant, or because they regard their duty as fully done when they pay their employés as they have agreed to do. I should be pleased to receive a full report from you, covering any convenient period of five, ten or fifteen years. If your books show contributions in money, remissions of rent, or any other assistance, will you state the fact and the amount, whenever this is possible? Should you desire a person from this office to prepare this information, I will send one on acquainting me with your wishes."

No reasons need be given to show the importance of this inquiry. Perhaps those who have not thought much over the matter, may not realize the magnitude of the assistance thus rendered to the working classes. If an estimate could be given for a considerable period of time, the figures would unquestionably be very large. Nor is this form of assistance of recent growth; it had its origin in the very beginning of our American civilization. In truth it has been questioned, whether or not the springs of helpfulness flowing in this direction, have not been drying up somewhat within the last century, and one of the reasons for making this inquiry is to answer the question. This is the reason why the letter was sent only to the larger employers of labor.

Before giving the information furnished by those to whom the letter was addressed, several questions require at least a brief consideration. First, has the employer any duty to perform toward his employés in relieving their distress beyond his duty toward other members of society in the same condition? and, second, if he has, what is the limit of his duty? Again, as the spirit to furnish aid in varying degree is quite general, how did it arise, and how far does it exist in other states

and countries. Again, should assistance be rendered; do not injurious effects follow wherever this is done, and are these not likely to continue and increase; in other words is not assistance, however well intended, abused, resulting in deterioration and dependence? Finally if assistance should be rendered, what forms are the most effective; those which are systematic, or those which are irregular,though it may be with a clear knowledge on the part of the person relieving of the conditions of the sufferer?

In the earlier history of our country, the people were nearly on the same plane of industrial advantage. They did not have much beside intelligence, energy, strong arms and faith, and a desire to make their way. The amount of capital brought by them to this shore, was small. In truth, this has always been the case from the beginning of the westward imigration to the present time. In the early days the acquaintance among the people was far more general than it is at present. There were more blood relationships in the same vicinity, beside ties of church and school and other institutions. In short, in one way and another, the people were more closely linked together, and were more nearly on the same plane socially, industrially and morally, than they are to-day. Thus related, the spirit of helpfulness was very general in those days. So, too, the relationship of employed and employer possessed a different significance from its present one. The farmer and his workingmen, toiled in the same field and ate at the same table. Thus, in many regards, the people were alike socially and consequently, in times of distress, the appeal for assistance, brought quick and full response. The change universally wrought in society in this regard, great though it be, is not so great, perhaps, as has been asserted in many quarters. Nevertheless, there doubtless was a nearer kinship in those days when each man knew those around him, than there is now. No thoughtful person can help seeing that acquaintanceship is becoming more circumscribed and class distinctions more strongly marked.

Three opinions are entertained by employers on this subject. First, may be mentioned those who do nothing, regarding their duty done when they have paid their employers as required by contract. This view is very lucidly expressed in the following letter received by the Bureau, in reply to the above letter. "We pay our men their wages and collect the rent for our houses, after that, they take care of themselves." Another says, "We don't even know our men's names, they are known by number and we don't care what they do with their money."

This is one side of the subject. Pay the workingman his wage, but doing nothing to create the belief that in time of distress he is to fall back on his employer, or that he is under a kind of parental care which will be extended more quickly towards him than towards other persons. This is the doctrine of the employer just quoted. In other words the

employer. having paid his wage as contract required, has fulfilled his duty and henceforth the same relation exists between the two as exists between other members of society. Is this opinion the correct one? It is not our province to prescribe the rights or duties of any class, but rather to collect information and make such suggestions and comments thereon as may be productive of the general good. The question, as may be seen from the answers, is an open one. There is however, a sharp distinction which should not be overlooked. If a man is injured in a mill, in consequence of some defect in machinery, or through carelessness of a fellow workman who was negligent, has not the employer a duty toward the injured person? In other words, if an employé is injured through oversight or negligence of the employer, should he not be relieved? The law imposes a legal liability and the moral liability is not less binding. Whether the legal liability is coextensive with the moral one, is a question of great importance, but which cannot be considered here. Another class of cases may also be noted, those who are engaged in unhealthy occupations, leading to permanent ill-health and perhaps to death. Should not the employers in such cases render assistance? Of course, one answer is that the men enter such occupations voluntarily; they can stop whenever they please, and therefore, there is no duty other than the general one requiring assistance. But this answer is not completed. Granted that the workingman is perfectly free to enter into a contract of this nature in the beginning, he is not so free to break away therefrom after the service has been begun, for it is not an easy thing for a workingman to change from one employment to another. Only those who have been deprived of employment and do not know where to look for more, know the horrors of idleness and starvation. When, therefore, it is glibly said, that if the workingman chooses, he can abandon his work and go elsewhere, it should also be remembered that this is not so easily done as the person imagines who is using the argument. This is especially true of persons who possess much skill. The higher the degree of skill the greater is the difficulty in engaging in other employment equally remunerative.

We have now mentioned two classes of cases. There is a third class in which the workingman is injured solely through his own negligence and recklessness. A great many accidents among miners are of that description. They expose themselves unnecessarily and recklessly to perils, which, in many cases would be avoided by more perfect knowledge of their employment, or by the exercise of more care. In any event, when they are caused purely by their own action and without any action on the part of the employer, then the question is a far more subtle one, whether he has any peculiar duty to perform in assisting them, beyond that which he has to perform in assisting the less favored members of society in general. The answer that may be made to this class of cases, in which the workingman is

suffering from injury or disease, occasioned solely by some imprudence of his own, or without any action on the part of his employer, must be left here.

Another opinion is that the workingmen should be aided when in need, but this should not be furnished in a systematic or organized manner. This view is well expressed in the following letter by an eminent manufacturer and whose kindness of heart and honest dealings are widely known. "Replying to your circular of the 10th inst., relating to the alleviation of distress among workingmen, we would say that we have no establishment for such purpose, nor do we think such arrangements are for the best interests of the employés or the public, for the reason that such methods engender habits of dependence, and detract from the dignity and self-reliance of the employé. We believe the establishment of such arrangements by the few, where unusual profit might make it possible, results in a wrong to the public, as they set an example which the mass of employers cannot afford to follow, without withholding for such purposes, part of the wages which the employé is entitled to expend as he sees fit. While we are as easily appealed to as others, by cases of distress constantly occurring, and have responded as we felt occasion and circumstance demanded, we keep no record of such cases from which to give the data you ask."

While the objection to systematic relief is worthy of the fullest consideration, may not the question be fairly asked, must not relief largely take this form among the larger concerns in order to be effective? Personal assistance may be effectually rendered when the employés are few, but how is this possible with railroads and other large companies employing several thousand men? We think that while this objection may be urged with great force among the smaller employers of labor, it has less weight among the railroads and other large concerns. Relief associations may be divided into two kinds. One kind is conducted purely by the men themselves, like the trade unions, which have a double object, the protecting of themselves in making contracts with their employers; and the administering of relief to their members. The relieving of workmen occasioned by sickness or accident, was the origin in truth, of most of them, particularly the English associations from which American labor organizations have sprung. The iron founders' society of Great Britain, which is more than eighty years old, for many years was a purely friendly society, and this may be said of the origin of many others; but there are many society organizations among workingmen of a purely friendly or beneficial character, as much so as the associations for the relief of the blind, or those who are afflicted in other ways. The constitution of a society existing among the employés of one of the horse-car companies of Philadelphia provides that a certain sum per week shall be contributed by each member, and then, when overtaken by

accident or sickness, he is relieved by the method therein prescribed, a certain allowance per week or per month, or otherwise. This is one kind of relief society existing among workingmen and which is maintained wholly by them. Other examples are given.

The worth of these organizations will hardly be questioned. Certainly in other countries, these features of the associations of workingmen have been commended by all classes. We think the same is true here. They encourage a spirit of kindness and good feeling among their members; they develop the cultivation of the finer instincts of human nature. Perhaps among the miners such associations have existed longer and have been productive of more good than among any other class of workingmen in our State. There is a special reason for this. The miners are subjected to peculiar perils in their vocations; they are exposed to dangers from which those are free who work above ground, as will be seen from the reports of the mine inspectors which are published annually with this Report. These miners, whatever may be the public conception of them, have as tender hearts as any class of men that live, and are always eager to aid others when assistance is required. As said before, the peculiar peril of their business accounts, in part, for this strong feeling that exists among them; and thus their charities have been very general and long continued. But elsewhere the same state of things exist in varying degrees. Associations are connected with not a few of the large manufacturing enterprises of the State.

Besides these organizations thus founded and supported wholly by the laboring men, there are other associations which are sustained partly by the corporations or individuals for whom they work. Of late years these have been multiplying with considerable rapidity. Within a couple of years the Pennsylvania Railroad Company has formed an association, the outline of which is herein given. At first the men were quite disinclined to enter the organization. They feared that it meant either lower wages for them, or that they were to suffer in some way if the organization should flourish. Consequently, the opposition was quite strenuous, but with modifications of the plan, and a clearer understanding of its probable results, this feeling of opposition wore away.

In other parts of this Report in the descriptions of the Cambria Iron Company, and of the Henry Disston & Sons manufactory, other well matured plans are given.

Returning now to the earlier inquiry concerning the desirability of rendering assistance, something more should be added. Is it true that the assistance of employers in times of distress will lead to a spirit of dependence and servility on the part of the workingmen? If this should be the outcome, certainly it would be deplorable. But this much is certain, that for two hundred years or more, different employers of labor have sanctioned such assistance. This is the start-

ing point in considering the subject. It has been freely given during all this long space of time. The experience of thousands of employers is on the side of rendering needful assistance. The voice of the whole world, with here and there an exception, approves. But a very sharp limit should be drawn in rendering it. If the granting of assistance should lead men to become dependent; should lead them to feign sickness when they were able to work; should engender habits of laziness and improvidence; should lead them to forget the future, and neglect to provide therefor, then the sooner it is cut off the better. But it is hardly possible that such assistance has ever been carried to this point. The employer has never supposed that he was giving so much as to lead men to become indolent, or to think that if they did not work on proper occasions, or lay by their earnings during seasons of unusual prosperity, they would fall back on him for assistance. This opinion or feeling, we say, has rarely been entertained by an employer. We think it would be very difficult, indeed, to find evidence of cases in which the workingmen refused to work, or shrank from it under one excuse or another, expecting to get a living out of his employer. It is sadly true that the poor tramp on more than one occasion, has committed a theft in order that he might be prosecuted and sent to jail, and thus get a gloomy cell for a home. It is also true that among the friendly labor societies in Great Britain the assistance sometimes rendered has led men to feign sickness or to be indolent, and prey on their fellow companions for a living. Such things have happened. Perhaps we ought to add here, however, that in all well managed friendly societies the kind of asssistance is credited, books are kept of the amount, and dates furnished and the causes therefor. Besides, regularly appointed visitors look after sick members and make reports and recommendations, and, therefore, whatever may be said about excessive assistance in the past on the part of these associations, it may be truly said among the best of these their assistance is very intelligently administered. But, turning now to the assistance rendered by the employer, we think the cases are extremely rare in which the expected assistance has been the cause for dereliction of duty on the part of the employé. We repeat however, that assistance in no case should be carried to such a point, but below this the experience of the world has certainly justified and approved the rendering of it.

In not a few cases in which assistance has been rendered by the employer, the employé has suspected that the prime object of so doing was not to administer benefits pure and simple, but to sugar over a hard contract, or to get more than a fair equivalent from him in the way of more work. In other words, charity or helpfulness has sometimes resolved itself into this form: Is not this reading-room, or hospital, or other assistance, devised for the purpose of making us more content with a lower rate of wages? Not long since, an enter-

prising firm in another State opened a building for the enjoyment of their operatives, on which a hundred thousand dollars had been expended. There was great rejoicing on the part of the operatives, but the *National Tribune*, of Pittsburgh, which is published for the workingmen, remarked, "it shows that" [the employers] "have made so much money that they are now able to expend $100,000 for the benefit of the labor by which that money (and doubtless a great deal more) has been amassed. Of course this is a commendable move towards something like an equitable division of the profits of the concern, but the worker's share comes to them in the shape of charity. In this country labor should not need charity, but it should have justice. If the working girls employed by this firm had always received a fair share of the product of their labor, the firm would not have $100,000 to spend in fitting up the building mentioned. Give the working women sufficient wages so that they can pay for music, lectures, books, and other means of improvement. Don't lower their self-respect by giving them a cup of coffee for one cent, or a sirloin steak for eight cents, but let their wages be sufficient to enable them to buy good food at the regular market rates. Let labor be self-supporting, and do away with the idea that the rich employer can take two dollars from his workers if he only returns fifty cents in charity."

This much may be said on this branch of our subject: No assistance ought to be rendered with a view of taking it from the wages of the workingmen in any form. In other words, it ought not to be a blind or cheat, to beguile them into a state or condition of things which is not fair or just towards them. If an employer erects a hospital for his men, and then gives them less wages on that account, he is doing a grievous wrong which society will not commend. Possibly some employers may have this end in view in creating such enterprises. We do not hesitate to say that all of these movements have no justification unless proceeding from the best motives. They cannot be justified if they are to be paid or taken from the workingmen's wages. If the *National Tribune's* view of the matter be correct, the action of the manufacturers in that case cannot be too severely condemned. But is not this unquestionably true, with some qualifications indeed, that the employers and companies generally who have paid the highest wages, have also been the readiest to aid their workingmen on all deserving occasions. With respect to the conduct of the larger employers of labor throughout the State, the evidence fully justifies the conclusion that assistance, either in a systematic or unsystematic form, is very generally rendered. The first opinion of employers above noted is happily confined to a few. This assistance takes all forms described in our letter, of money, remissions of rent, payment of doctor bills, funeral expenses, the continuing of wages during sickness, either in whole or in part, and in other ways which may appear in reading the evidence herein given. The most inter-

esting thing in this connection is the formation of societies of one kind or another for rendering such assistance. A very considerable number of them exist throughout the State, and their mode of rendering assistance possesses great interest. We have given the constitutions of several of them, and regret that our space will not admit the giving of more. We have sought to select from these the plans of such associations as are most likely to be used as patterns for others to follow. These associations are of varying merit.

Concerning the worth of systematic helpfulness, much may be said. At present two or three things may be noted. First, that the administration of systematic relief, is likely to be far more beneficial than the fitful or irregular kind, by which we mean to say, that the merits of each case are likely to be more fully considered, and such relief given as will be most effective, while in the case of relief administered irregularly, much depends upon the mood of the giver, the time he has for listening to the case, or for seeing the sufferer. In short, is not experience quite in accord that the irregular or fitful giving is of a less efficient kind than the other? This is recognized everywhere, and is one of the reasons why charity has taken an organized form, and the remark applies just as truly to the helping of workingmen as to the helping of any other class needing assistance of this kind.

Perhaps another word may be fittingly added by way of contrast between the conduct of the American employer, and the foreign one in relieving distress. We do not mean to be unjust toward foreign employers of labor, but no fact is better known than this, that the workingman is a very different creature in the eyes of most foreign employers than he is in the eyes of the employer here. It is doubtless true that some employers in this country are quite deserving of the severe criticism pronounced against them, but in comparing the American and foreign employer of labor, the judgment is clearly in favor of the former. There have been some great institutions erected within a few years by foreign employers to aid their men, but these are like oases in the great desert. Long days, low wages, Sunday labor, the treatment of men like brutes, or perhaps with less regard, must be the judgment concerning the foreign employer of labor. As said in the beginning, the feeling of kindness and charity toward the employé had its birth in the olden time when both classes were more nearly on the same social plane, and it has been continued to this day. Abroad, the separation into classes has been clearly and strongly marked for centuries, followed by this consequence among others, that the employer has kept a closed hand on most occasions toward his employés. So far, in truth, have the two classes been separated that the employé has rarely turned to the other when overtaken by sickness, accident or other cause preventing him from doing his work, even though he had received only a portion of his just reward.

The following replies were received to the above mentioned letter.

Others containing the same statements as those herein given are omitted, as their publication would add nothing to the subject.

UNSYSTEMATIC RELIEF.

No. 8341. It is our custom to allow one-half pay to employés who are injured, out of which allowance we require them to pay their doctors' bills. This is our custom, it is not in any way an agreement.

No. 8095. We have no arrangement of a systematic character for such aid but in case of accidents, it has always been our custom to defray surgeon's expenses where advisable, and we recall no cases in which it was not advisable from a charitable standpoint at least. No special record has been kept. In some cases pay is continued during disability but not always. Each case stands upon its own merits.

No. 8343. We have no settled policy. In some cases we continue payment of wages in full and pay all expenses; in other cases we pay part wages depending upon the circumstances surrounding each case. Some of our employés we pension, to others give gratuities from time to time. We could not ascertain the yearly amounts paid.

No. 8304. If any of our help are injured in the discharge of their duties, we pay all medical expenses and, if necessary, contribute to their support. Also do the same in cases of sickness if they have been with us any length of time.

No. 8345. Our road has been in operation steadily for ten years, and in all that time not one person was killed or injured among the employés. We have no arrangements for aid in case of sickness but when sick have, up to the present time, continued their wages in full.

No. 8251. We have no arrangements for helping our employés in cases of sickness or accident. As a rule, our people are in fair circumstances many of them owning homes bought by their savings through building societies. In cases of extreme sickness, it is customary for them to take up a collection among themselves, to which we contribute, in aid of the unfortunate providing they are deserving. Very rarely our employés become inmates of our local hospital. To this they and we contribute yearly, on a day set apart for that purpose.

No. 8154. We have no system for relief but have, in the last five years, given credit in our merchandise department to poor and helpless men and families, of nearly ten thousand dollars and remitted a large amount of rents.

No. 8199. We have no established rule but in case of accident we alway furnish a doctor and medicine and continue their pay until they are able to go to work, and as a rule find that after they are well, they leave us and work somewhere else. In case of sickness if, on investigation, we find them worthy, we attend to their wants.

No. 8206. We have no regular rules but judge each case on its merits. We frequently pay wages in all or part during the absence of employes. We also sometimes pension those who have served us well and become, through age, incapacitated for continued duty. We have also frequently aided in support of the widows and families of faithful employés, but have kept no accounts whatever, of such matters.

No. 8127. In all cases of accidents to employés, the company has paid doctors' bills and made no charge for rent during disability of employé. In cases of distress the company has contributed to the

relief of the needy parties, this being left to the discretion of the superintendents. We have kept no special record of contributions.

No. 8296. Our company offered the men at both our collieries excellent chances to establish a benefit fund the same as is now in operation at ——— but up to the present, they have not accepted the offer. We often donate coals, rents, &c., to the widows and needy.

No. 8337. I don't allow our men to *beg, borrow from or assist each other.* In all cases where necessity arises, from accident, sickness or death, I require the men to come to me and I see that their necessities are relieved. *It is not done by the company.* It has cost me hundreds of dollars for which I never got any return, but in many cases the money has been repaid by the parties. I have managed the company on the " paternal principle " for twenty-seven years and any of our men are ever ready to serve me in any capacity.

No. 8221. It is seldom that we are called upon to assist our employés in times of distress although we have done so. We have no systematic plan for such assistance and have never found one necessary. A number are members of the building and loan association and own their own homes. We own no tenements and have never had a store to supply our workmen.

No. 8353. I will say that our arrangements for taking care of and aiding employés who, while in our services are injured in the discharge of their duties is as follows: An injured man for the first two weeks of his disability, if his injuries were caused by accident and not through carelessness, receives his full time and wages, and for the four weeks following, he is allowed half time and wages. Medical attendance is furnished by the physician who is regularly employed by this company. In the event of death the funeral expenses are paid by the company.

No. 8274. Our coal miners have what is called an accidental fund to which the employés and officials contribute. In case of sickness or accident $5.00 per week is paid from this fund during disability. An annual excursion is given for the benefit of the fund and the proceeds placed in the fund treasury.

Some of the men at our iron and steel works belong to beneficial societies which pay certain fixed sums in case of accident or sickness. In case of accident or death to those who do not belong to such societies, it is customary for the general manager to use his own discretion in relieving distress. We frequently pay surgeons' bills, remit rents, pay funeral expenses, &c. In some cases rents have been cancelled for long periods and families supported for many months. No special records have been kept of such matters and we can't get at the aggregate amount.

No. 8186. We have no regular arrangement for aiding employés in cases of sickness or accident. In most cases of the latter, our employés are paid their usual wages until able to work again. In any case of distress occasioned by sickness, should it come to our notice, we are always willing to help our employés. Our books do not show contributions, &c., of money for these purposes; they have gone into the general expense and thus record of them is lost.

No. 8335. It has been the policy of this company in the past to render assistance to its employés in case of accident or sickness incurred during the discharge of their duties; beyond this we have not contributed to the support of our employés.

No. 8233. We have no definite arrangements binding us to any

relief for our employés beyond the payment of salaries and wages as per contract. We do not own any tenements occupied by our work people. In the cases of clerks, salesmen, accountants, &c., the salaries are continued during ordinary sickness, and in the case of accident occurring to a workman actually engaged at the time in our service, the same concession is usually made.

No. 8000. I have no arrangement with my employés in reference to the matter. But, when distress arises from sickness or accident, we render such assistance in each particular case as the circumstances seem to require.

No. 8137. We have no established rule or organized plan for the relief of our men in sickness or accident. In the latter we have usually paid for medical attendance, and where circumstances justified, have given them other help. Most of our regular workmen have been in our employ for years, some over twenty-five years, and whilst there is a comparatively small percentage of them who, in case of sickness or death, are in need of help, those who are always let us know, and our donation is proportioned by the urgency of the case, and repeated when found necessary. We, in many instances, also have advanced money to our men while yet in health, and in the event of death before it was paid, we have always considered such debt as cancelled, and given additional help when circumstances warranted. All this has been done, however, in obedience to the general law of humanity, and we have kept no record of such expenses, but have charged them into general accounts, along with other donations, charities, &c.

No. 8269. We have adopted no special method for the alleviation of distress or furnishing assistance, but have been accustomed to note the applications from our men coming personally or through our foremen of departments, and to inquire into the nature of the case, and when deserving have advanced money to meet the necessities, and in a few special cases have made advances beyond actual earnings. We rarely make direct contributions as we find it much more advantageous to the men to help them to help themselves. In matters of rent, &c., we have, in cases of sickness or other distress, extended payments to meet the case. We have encouraged our men to insure in the accident insurance companies, and quite a number of them from year to year avail themselves of this provision against loss of time through injury.

No. 8004. This establishment has as yet no symtematic arrangement for the alleviation of distress among employés, although it has been a custom in case of sickness, disability or accident, to start a subscription to which voluntary, and sometimes liberal, amounts are subscribed and paid by the other employés as well as the employer.

Such cases are, however, not of frequent occurence. Men of dissolute habits cannot long remain upon the pay roll. Our employés are generally of a self-sustaining, self-respecting, provident, industrious class. Cases of accident or real distress are very rare, but when they do occur, both sympathy and substantial assistance are freely given.

No. 8157. We have no means of helping those who are sick or get injured in any works except by a collection taken up among the employés and headed by our contribution. This is always ample, as our men are liberal in such cases. We keep no account of moneys collected by our men for such purposes. The collection paper is handed into the office and we hand the collector the cash, and deduct from the

men as we pay them. We think the men or a good many of them at least, belong to associations which pay sick or disabled benefits to those that are worthy. Any other information will be cheerfully given.

No. 8216. We do not make special agreement when engaging our men, in case of sickness or accident, but use our best judgment as to relief in each individual case. We have happily had among one hundred and seventy-five men and much machinery, no accident for several years. The care taken to keep them from all avoidable exposure to the fumes of lead, which are dangerous to health, has prevented any case of serious sickness for perhaps ten years. During sickness we see that their families do not suffer. The men rent houses in the neighborhood—not ours.

No. 8173. We will say we have no organized arrangement for the benefit of our employés in cases of sickness or accidents. We claim we pay our men full wages and every week, hence we return them a fair compensation for the service they render. We frequently make contributions to those in our employ who may be compelled to lose time by reasons of sickness or accident, but we do this the same as we would do for any other worthy poor. This is all that we can say at present.

No. 8073. In answer to circular, we beg to say that we have no special account on our books "alleviation of distress" nor have we any special system of aid to employé, but dispense help whenever we believe it to be deserving and charge it up under the general head of "charity."

No. 8175. In answer to your questions we beg to say that we have no arrangement to assist employés in time of sickness, distress or accident. Accidents are of rare occurrence in our works. We have never had any serious one during our twenty-two years of business. We have paid doctors' bills in some instances, and assisted others who were in peculiar conditions of distress. We have only three houses rented to our employés and those are rented at much lower rates than we would be willing to rent them to others not our employés. We prefer to pay our men liberal wages and try to encourage them in habits of economy and self-reliance, but as a rule, we do not wish to interfere in the private affairs of our employés.

No. 8134. We have your circular letter dated October 10th. under the head of "alleviation of distress," and in reply would state that we have had no occasion since our organization to help any of our employés in the direction indicated, and have no arrangement to that effect.

No. 8019. In regard to my giving assistance to employés that are injured, would say I keep no account of anything of this kind, but endeavor to assist all of my men when prevented from working by sickness.

No. 8060. No regular system of relief to employés disabled for duty by reason of sickness or accident, is in existence at these works.

When any case is presented requiring special consideration, a subscription list is usually circulated, and usually responded to in a gratifying manner.

The association has frequently remitted rents, paid doctor's fees and nurses for sick and, at times, funeral expenses of employés meeting death by accident while in discharge of duty. These items have all

gone into general items of expenses of manufacturing and it would be extremely tedious to approximate.

No. 8041. Concerning your inquiries of same date regarding our arrangements for aiding employés in distress, would say: since the organization, we have supported a bed at the expense of $200 00 per annum, for the use of our employés without charge, when ill or injured. Also, for many years, we have had a hospital association among our hands. Those belonging to it pay into the office ten cents each week; we add to this fifty per cent. of the whole amount, which goes into our books in the "hospital fund" account. When a member is incapacitated from work, he can draw from this fund $5.00 per week for five weeks. The balance now to the credit of this fund is $110.65. In addition to this, we frequently aid our men when deserving it, but keep no regular account, and could give no idea of what it has amounted to.

Most of our employés have accident policies in Travelers' Insurance Company, but no other arrangement for aid in case of accident or sickness. When any of our employés meet with an accident in the discharge of his duties, we furnish the best medical treatment, allowing full time during absence from duty.

Our books do not show amount expended in that manner, but from a careful estimate we believe, in the past three years, we have expended about four hundred and twenty-five dollars. We employ forty-five men.

No. 8084. We can make no fuller reply to your circular of 10th inst, than, that for the past fifteen or twenty years, we have pursued the unvarying policy of paying to our unskilled laboring men higher wages than were paid by our competitors to the same class, not only when trade was active and prices were high, but also when business was depressed. The principal object in pursuing this policy was that the men might be enabled to accumulate little funds of their own and to encourage them to become owners of property as far as their savings would permit. We seldom had occasion to contribute to their support as a matter of charity.

No. 8031. In answer to your favor of the 7th inst., we have to say that the only instance in our existence as a firm, dating from March 1, 1883, where we had an opportunity to assist an employé, was in the case of one employé, who had one of his legs broken while employed in our mill, and whose doctor bill we paid, amounting to $55.00. We know of no unions in this section among the kind of labor we employ and consequently never had any trouble that way. Our employés are all self reliant men, getting from $1.75 to 3.25 per day and being away from the influences of saloons and blatherskites, put in their time at work and seem to be contented. Probably most of them would feel insulted at an offer of pecuniary assistance. In fact there has, so far, been no necessity for anything of the kind with the one exception mentioned.

No. 8078. If any of our employés are injured while at their work we always pay the doctor's bill, but have not kept an account of the money expended in this manner and consequently cannot say what amount has been paid.

No. 8108. We have, within the last five years, defrayed the funeral expenses of three or our men; have given orders on provision stores to supply our needy employés during sickness; have allowed their wages to run on during illness, and in two cases, have paid their doctor bills.

No. 8030. In reply to above would say, that we have no organized system of relief for our employés in cases of sickness or distress; but in all cases have taken care of any of our employés who needed relief.

No. 8038. We have no established system for the relief of our employés, but we never allow any of our workmen to suffer for want, occasioned by any accident which may have happened to them while in the discharge of their duty.

No. 8204. We do not have any special arrangement between workmen and ourselves, for aid in event of accident or sickness, preferring to treat each case as it occurs according to our judgment as to its merits. We have very few accidents, and those mostly not of a very serious nature.

Nine-tenths of the accidents that occur in any well-regulated shop, we believe, may be directly traced to the carelessness of the individual. Our workmen consist mostly of journeymen who make good wages, and consider themselves independent, and a few apprentices whom we look after individually as to their general conduct. Also laborers, Irishmen, to whom we pay $7.50 per week.

We have been to considerable expense ($3,500) to have our shop fitted up with overhead system of tramway which relieves the laborers of heavy lifting and reduces the liability of their getting injured. Our idea is that by going to this expense we help both the men and ourselves, by reducing the liability of accident instead of paying them after getting hurt. In one instance, where a laborer was hurt, and confined to hospital three months with crushed toe, we sent one of the men to see him each week, and gave his wife three dollars per week while he was in the hospital; after he had came out, we gave him the the balance of full wages which we had saved back. Also in case of apprentice boy who was out three months with inflammation of eyes, and confined to dark room of house, we saved the wages until completion of apprenticeship and paid them to him in full. The idea is to avoid the establishment of any precedent, whereby a man or boy when convalescent, would be disposed to prolong his recovery. We would here remark in case of the laborer above recited, that he only worked three weeks for us after his return, when he applied to have his wages raised and left us because we refused.

No. 8283. We had no regular system of helping them in cases of sickness. We have always helped those who needed assistance, and have never allowed any to want medical attendance when needed, or want for the necessaries of life. We have furnished them money when needed to go away from this place for medical treatment; we have not helped those of our men that were able to take care of themselves. There has been but little sickness and very few accidents to our men for the past fifteen years. Have kept no account of what we have furnished gratuitously to our employés, so we cannot give the amount. If there was any way to arrive at the amount would be glad to give it.

No. 3261. As to aiding our employés in times of distress, we have no regular established arrangement for furnishing such assistance, but do always aid them when they actually need it, either by contributions in money, or fuel, or remissions of rents, or by all of those combined as the case may require. As we keep no separate book account of those contributions, it would be impossible for me even to approximate the amount of them for any given length of time.

No. 8215. In answer to your circular in regard to alleviation of dis-

tress, we report that our employés several years ago, organized among themselves a relief association of their own, under the name of the Iron Workers' Relief Association, with sick and accident benefits, and a sum paid to family at time of death; and it is now and has been in successful operation, and appears to be well managed. They organized for the purpose of stopping the passing around of subscription lists to which we always contributed, but to what amount can't say now. They have succeeded in stopping it and the members now take care of themselves. Our plan with those not members is, if they are reliable parties, to loan them such money as the occasion requires and to collect it on weekly sums to suit the borrower after his return to work.

No. 8600. Replying to your circular, we have no fixed arrangement for relieving our employees in time of distress occasioned by accident. At our oil works we have been exceedingly fortunate for the time that you mention; we have only had but one serious accident, which was caused by the carelessness of the employee himself, and in that case we paid all the expenses during sickness, and also his funeral expenses, which did not exceed $150.

On account of so few accidents, we did not think it worth while to have any fixed arrangement, to relieve distress, but when there was a case that required attention, we have always given it.

No. 8261. Up to May 1, 1886, when the ——— Union made their first demands upon us, no one in our employ had ever been "docked" any amount of wages for loss of time resulting from sickness or from disabilities or injuries received in the discharge of duties appertaining to our business. This rule, adopted by our senior Mr. ———, many years ago, was held sacred up to the time of the formation of the ——— Journeymens' Union, K. of L., and the subsequent strike. It was suspended for about one year during the agitation and period of the strike, and again became operative on the final collapse of the same.

This arrangement had undoubtedly worked very well in our case, having had men in our continuous employ for periods of from twenty-four years (the longest) down to three years (the shortest), which was certainly very creditable, alike to employers and to employés. The unfortunate strike broke up this pleasant relationship between us and our men, and although *all* but two of those that had gone out made application for reinstatement, only *two* of our old hands were taken back, and enjoy our confidence as of yore. Previous to the agitation and strike in our business, we had opened accounts in saving funds (in their own names), for such of our men as wished to leave some of their wages on deposit with us. The disastrous affects of the strike for them, can best be judged by the fact that every one of these books has been surrendered and the accounts cancelled.

We have nothing in our books to show amount of contributions of moneys, remittances of time lost, rents, etc., for the period that we have been in business, say thirty years.

The small number of men in our employ, nineteen, precludes the possibility of having any species of beneficial organization of our own. Inquiry among our employees however, shows that they are much better provided for than we had imagined, which is certainly as gratifying to us, as it must be conducive of good to them. The following table explains itself:

Of 19 employees 4 belong to 1 lodge or beneficial society; 4 belong

to 2 lodges or beneficial societies; 4 belong to 3 lodges or beneficial societies; 1 belongs to 4 lodges or beneficial societies; 2 belong to 6 lodges or beneficial societies; 4 belong to no lodge or beneficial society.

Only 1 of the above number belongs to the K. of L.; 4 of the above number also carry life insurance, 1 of the men who does not belong to any lodge or society, being one of those who has his life insured. This leaves only 3 entirely unprovided for in the way of assistance, or benefits outside of his regular wages.

We have also inquired into the character of the lodges to which our men belong and find them members of the following orders: Red Men, Odd Fellows, Seven Wise Men, Knights of Pythias, Order of the Iron Hall and Knights of Labor. The beneficial societes are all responsible and in good standing. The benefits in case of sickness run about $5 per week; burial moneys in case of death from $50 to $100.

Owing to the secret nature of the union we cannot find out anything about their dues, benefits, etc., but have every reason to believe that they have no beneficial features but only those of mutual protection.

Since pretty well rid of the thralldom of the unions we percieve, we think, a strong inclination on the part of our men to join reputable beneficial societies; a move that we trust will redound to their moral, intellectual and substantial benefit.

No. 8281. While we cannot state the amount given to assist our employés, occasioned by sickness or accident. We have in many instances paid their doctor's bills, contributed money, remitted rent and assisted them in various ways.

No. 8179. Enclosed you will find report on alleviation of distress. We have no means in our offices of finding out just how much we have given our men during the period you name.

The only "arrangement" we have with our men in case of accident or sickness is this: If they take up a subscription among themselves, it is presented to the paymaster who immediately advances the cash to the person whom it is in favor of and then collects it of the men on the next succeeding pay day. That is the only distinct *understanding:* but it has always been the practice of this company to aid, by direct contributions, all cases when by accident or sickness the employé was needy, providing of course, that he had been faithful to us. All these it seems have been thrown into profit and loss account, and cannot now be well reported. Whenever a fatal accident occurs, the company has, for the past four years paid $25.00 for funeral expenses. In addition to this has given from $100.00, in one case, down, to $20.00 to the family of the deceased, according as they seemed to need, and in addition has always furnished employment to the surviving members, if they could work, in preference over any one else.

In cases where men become injured or partially disabled, we endeavor and generally do give them employment until I sometimes think we have two many of that class, yet humanity prompt us to do it.

As we have stores it is but proper to say we frequently aid our needy and unfortunate employés through these, and make no account of it, send them once, twice or more times the order, in provisions or clothing and make no charge. Furthermore we have never refused food to any of our employés whether anything was due them or otherwise.

We have certainly tried to act in a charitable and humane way with all those in our employ and are pleased to state we seldom hear complaints on that score.

Of course we have our troubles with our men, as other companies, and employers do, but most of these have come through the operation and management of the labor organizations. Every strike we have had for the past five years has been brought around by such agency, and in every one of those strikes the men have gone back to work again for *less* than when they went out, or less than we offered them if they would keep at work. The advances in price have *all* been made either of our own volition, or through conferences with representatives of the men *themselves*—those who did *not* come as representatives of any organization. These organizations have not demanded that we should or should not employ any one, but have sought to dictate as to prices, &c.

I regret that we cannot give you complete statement, and think we shall hereafter keep an account of our charities. Heretofore we have obeyed the scriptural injunction, "let not your left hand know what your right hand doeth."

No. 8219. We pay our men very liberal wages and have no instances of distress.

No. 8093. Any of our employés in need of assistance who make their wants known, are assisted by us, but we rarely have such cases.

We think that contributions for this purpose made in a regular and definite way for future use, a bad thing for employés.

In case of factories or communities where the employés constitute a separate village, some system of voluntary regular contributions might be successful.

No. 8110. We have always assisted worthy poor men, whether in our employ or otherwise. When men are hurt when at work for us, we pay doctor bills. Have never kept any account of such matters, and cannot give any idea of amounts so paid.

No. 8120. We have no record of charities but always aid deserving sick or injured employés. Cash, goods and medicine from store, funeral expenses and light employment for disabled employés is our line of charity.

No. 8200. In reply to your communication relative to "Alleviation of Distress," and dated December 5, 1887, we answer that we have no organized scheme for assisting our employés when in distress, but that we take care of them in the manner described below.

1st. The most painstaking care is exercised to prevent accidents, and to insure the health and comfort of the men in their surroundings when at work.

2d. We have a good physician in the immediate neighborhood, paid by the firm, who can be called by any foreman in case of accident or sudden illness.

3d. Any accident case or illness needing hospital treatment is attended to by the firm which, as a body, makes to one of the hospitals an annual contribution more than sufficient to cover the expenses of caring for all the patients sent. Admission to the hospital is secured for hospital cases, and the families of married men are provided for, or the patient is paid half wages.

4th. We either pension outright or provide with light work men whose disability is of a permanent character. We have now some fifty men in our service whose employment has a benevolent basis,

i. e., they would not be employed upon strictly business considerations alone.

NATIONAL TUBE WORKS COMPANY.*

Hon. ALBERT S. BOLLES,

Chief of Bureau of Industrial Statistics, Harrisburg, Pa.

DEAR SIR: In answer to your circular of December 5, 1887, we beg to make the following report for the National Tube Works Company, of McKeesport, Pa., for the past five years—previous to which no systematic account was kept.

In 1881 we employed in our works 2,000 men, which has increased to the present date to about 4,300 men.

We have made it a practice for many years to pay the first charge for surgical expenses for accidents, or cost of burial, if death occurred; also, in many instances, the entire bills for sickness caused by accidents, and also assistance for distressed persons, widows orphans, &c. We have endeavored, as far as possible, to be just, as well as generous, in the giving of aid outside of medical expenses or funeral charges, and have had a great deal of trouble therefrom. We have frequently been grossly deceived, although we have taken much time and trouble to secure facts. We have twice endeavored to institute co-operative insurance against loss by accident or death, in favor of our workmen, but have utterly failed, greatly from the migratory character of a large part of our laborers, and from the subscriptions being voluntary.

The following list of charity expenses and medical services, from July, 1881, to June, 1887, will give you all the figures we have in our possession:

	Charity.	Medical.	Total.
July, 1881, to June, 1882, (charity six months only),	$181 50	$418 15	$599 65
July, 1882, to June, 1883,	440 00	338 00	778 00
July, 1883, to June, 1884,	911 50	287 40	1,198 90
July, 1884, to June, 1885,	1,231 90	324 60	1,556 50
July, 1885, to June, 1886,	2,552 98	506 50	3,059 48
July, 1886, to June, 1887,	3,754 13	900 50	5,654 63
Total,	$9,072 01	$2,775 15	$12,847 16

The system of aid we have given for these five years has been principally by orders for groceries, clothing, coal and rent, and, on very special occasions, money has been given. The proportions, we should say, would be 50 per cent. groceries, 15 per cent. rent, 10 per cent. clothing, 2 per cent. coal, and 23 per cent. cash.

In addition to the above, we have made a very large number of loans, without interest, to a great number of men, amounting to many thousands of dollars, which have been deducted from their pay in small amounts, covering, frequently, several months.

We have some few pensioners—mostly widows left penniless with young children. Those who receive money in charity or loans, or are pensioners, are generally decent, quiet, deserving people, to whom the temporary aid is a great help.

* In this and other cases in which the names of individuals and companies appear in the Report, permission has been granted to publish them.

Our experience teaches us that great circumspection must be used in giving aid, so as to escape causing eleemosynary degradation, which, to an American or generous-minded foreigner, is very painful and to be avoided by the giver.

Yours respectfully,
National Tube Works Company.

THE BETHLEHEM IRON COMPANY.

Hon. Albert S. Bolles,

Chief of Bureau of Industrial Statistics, Harrisburg, Pa.

Dear Sir: To your circular letter, Form 2, "Alleviation of Distress" No. 8286, dated October 18, 1887, we have this to say in reply, to wit:

We have an association composed exclusively of the employés of the Bethlehem Iron Company. The purpose of the association is to defray funeral expenses of its members and their wives, as well as to furnish pecuniary aid to its members in case of sickness and disability, when not caused by the use of intoxicating liquors, and which shall have been contracted or incurred only after becoming a member of the association. Membership is restricted to that of persons between the ages of 15 and 55. Benefits are $4 per week, not exceeding a period of 26 weeks; after that $2 per week for another period not exceeding 26 weeks of continuous sickness or disability. Members contribute 60% and the Bethlehem Iron Company 40% towards the fund out of which benefits, etc., are paid.

Very respectfully,
Abraham S. Schropp,
Secretary.

THE DRIFTON COAL COMPANY.

Drifton, Pa., *October 12, 1887.*

Hon. Albert S. Bolles,

Chief of Bureau of Industrial Statistics, Harrisburg, Pa.

Dear Sir: In answer to your letter of October 7th, 1887, in reference to what arrangements we have for aiding our employés in case of accident, would say that our arrangements are as follows:

Whenever a man while in the discharge of his duty is hurt, whether the accident is due to his own carelessness or not, unless he should be absolutely acting against the rules of the company, we pay five dollars ($5.00) per week to him until he is able to do light work, which is then given to him. In case of death, whether by his own carelessness or not, the company give fifty dollars ($50.00) in cash for funeral expenses, and pay the widow three dollars ($3.00) per week for one year, if she remains unmarried, and one dollar ($1.00) a week to the widow for each child, until said child reaches the age of twelve years, which is the age at which, under the law, they can go to work. There is no contribution on the part of the men; the whole amount in both cases being paid by the company. The company, also, has a hospital for accidents, which is thoroughly equipped and under the charge of a thorough trained male nurse. The employés pay sixty cents ($0.60) per day, which is about the lowest amount for which board can be obtained. In addition, they have all medical attendance and nursing, and are furnished with all the necessary medicines, and such food, wines, etc., as are necessary; so that, if a man is hurt, he does not go

to his boarding house, and his expenses are, therefore, not increased. At the same time he receives his five dollars per week. The actual cost of boarding a patient is about three times the amount charged him.

We have disbursed since 1875, on account of the accident fund, $35,491.71, and since the opening of the hospital in 1882, the expenditures have been $7,789.89 in excess of the receipts. Making a total paid out on account of accidents to the men of $43,281.60.

Yours truly,

COXE BROS & CO.

GREENSBURG MUTUAL, ALEXANDER, &c., COAL COMPANIES.

GREENSBURG, PA., *December 30, 1887.*

Hon. ALBERT S. BOLLES,

Chief of Bureau of Industrial Statistics, Harrisburg, Pa.

DEAR SIR: Your circulars to the Greensburg, Mutual, Alexandria, Hempfield and Carbon Coal Companies concerning the alleviation of distress among workingmen, have been referred to me, these companies being all under our management and the men employed by each, treated similarly. Hence, we conclude that one general report will suffice for all, and thus save space. We have in our employment about fourteen hundred persons engaged in mining coal and making coke. Many of them have been with us since we first engaged in the business, fifteen years ago. In the employment of wage-workers, we have always endeavored to secure those of good habits who were most likely to remain with us, take interest in our business and purchase comfortable homes of their own. We have always paid the highest wages the business and the state of the market would afford. When the price of coal or coke has advanced, the wages of our employés have been correspondingly raised without their solicitation; and when, on the other hand, prices have been reduced, there has been no reduction in wages until found unavoidable.

We pay our employees every two weeks and should necessity require it, we advance them money at any time between the regular pay days, and frequently when none is due. To their credit let me add, that our losses in this way have been very light.

In cases of injury among our people, we pay all expenses when necessary. In case of death we pay funeral expenses and have never paid the representatives of the unfortunate employé less than one hundred dollars and sometimes much more. Substantial aid in cash and otherwise, has also been given to their widows and children, but no account has been kept of the amounts thus contributed in individual cases.

We go upon the old and somewhat forgotten, principle, that the interests of the employer and employé are mutual and that if the one receives more than his share of the profits of the business, he does so at the cost of the other. There are so many ways in which an employé can work against, or favor the interests of his employer, that we think fair treatment on our part begets good feelings on theirs, in consequence of which, we have been free from voluntary strikes. Our methods often for a time are expensive to the companies yet the kind feeling which is usually evinced by our men fully compensates for the effort to establish friendly relations with them.

It has been our desire to organize among our employés some beneficial association by which each can pay a certain sum monthly into a common fund and the companies a certain additional sum. I append herewith a plan which we have had in operation at our Alexandria works as an experiment. Its first years' operation having just closed, we send a statement of its workings for that period. Our men seem to like it and it has already done much good. This plan is crude yet in the absence of a better, it works quite well so far.

If you could publish some other systems of organization, which you know to have worked successfully, we will be greatly benefited, as doubtless will many other operators in the State.

Very truly and respectfully yours,

George F. Huff.

Rules and Regulations of the Alexandria Benefit Association.

1. All men and boys employed by the Alexandria Coal Company, and carried upon their pay rolls, shall be members of this association, and such membership shall terminate immediately when the member shall be no longer in the employ of said coal company. Boys under 16 years of age shall pay half ($\frac{1}{2}$) rates, and shall be entitled to half benefits.

2. Levy for membership to be twenty-five cents for each calendar month, or more if needed.

3. Benefits to commence three days after accident, and payable at rate of five dollars per week, not exceeding twenty-six weeks.

4. Benefits to cease after twenty-six weeks from date of accident.

5. Disability must be from actual casuality at the mines or going to or returning from work—not injured from strain or otherwise that may be due to a weak condition of the body.

6. Beneficiaries are prohibited from doing any work unless specially permitted by the whole committee.

7. In case of loss of limb the full amount of one hundred and twenty-five dollars may be paid at any time, and at discretion, seventy-five dollars more will be paid toward getting an artificial limb.

8. Death.—One hundred dollars will be paid to the widow or legal heirs when a member dies from accident at the works, and fifty dollars will be paid when death occurs within six months of continuous disability.

9. Notice of accident to be given to the president or secretary of the committee within three days of its occurrence. In all cases a doctor's certificate must accompany each application for relief.

10. Election.—All members of this association shall have one vote at the annual election.

11. The annual election shall be held on the first Monday of December in each year.

12. A committee of five members shall be elected at the annual election each year to serve for the ensuing year and shall be paid one dollar each per month for their services.

13. The committee shall hold stated monthly meetings on the first Monday of each month during the year to transact any business that may be brought before them.

14. The committee shall appoint their own president and secretary.

15. The president shall have authority to call the committee together at his pleasure to consider any matters of importance.

16. The superintendent of the Alexandria Coal Company shall act as treasury of this society: and, he shall pay on the orders of the committee all the moneys in the treasury: and a further sum to be provided by the Alexandria Coal Company equal to the amount collected as above provided in any single year.

17. When the orders on the treasurer shall exceed the fund, as provided by rule 16, then a further assessment of twenty five cents per month shall be levied on each member.

18. The financial condition of the organization shall be set forth each year by the treasurer in a full and complete statement of the receipts and expenditures, the same to be posted in two or more conspicuous places at said coal works. The surplus if any remaining in the treasury, shall be carried into the accounts of the ensuing year.

19. These rules may be altered or amended at the time of any annual election by the concurrance of a majority of members, with the assent of the Alexandria Coal Company.

The foregoing arrangement as specified in rule sixteen, in reference to the Alexandria Coal Company is fully ratified and agreed to by said company.

GEORGE F. HUFF,
President.

THE MIDVALE STEEL COMPANY.

PHILADELPHIA, *October 21, 1887.*

HON. ALBERT S. BOLLES,
Chief of Bureau of Industrial Statistics, Harrisburg, Pa.

DEAR SIR: Answering the Bureau's circular letter of 18th inst., in regard to "Alleviation of Distress," we beg to say that this company makes no provision against the sickness of an employé, but has a beneficial association which contributes a certain sum in case of accident happening at the works. The full details of this organization will appear in the pamphlets and papers herewith enclosed, and we trust will assist you in your researches. We would add that our company contributes to the association a donation of all the docks received by us from the men for infractions of the rules, and this donation amounts to about $25 weekly. We contribute also to the Germantown Hospital $350 per annum, and to the Jewish Hospital $100 per annum, and ambulances from both these hospitals are always at our service.

We enclose your circular "free shops," with answers to your several queries, which we trust will be satisfactory.

Yours truly,

CHARLES J. HARRAH, JR.,
Vice President.

Midvale Beneficial Association.

ARTICLE I.—*Name.*

This association shall be known as the Midvale Beneficial Association.

ARTICLE II.—*Members.*

SECTION 1. Only employés of The Midvale Steel Company shall be eligible to membership of the association; and any member shall for-

feit his right to membership and all benefits appertaining thereto upon his leaving or being discharged from the service of the said company.

Section 2. Employés, desiring to become members, shall sign a form of application, which shall bear upon its face the by-laws of the association. This application shall state the age, occupation and residence of the applicant, and the name of the person to whom benefits shall be paid in case of the death of the applicant, and shall be witnessed by two (2) disinterested persons.

When this application is approved by the trustees, the applicant shall become a member, and shall be provided with a certificate to that effect.

Section 3. Any member may withdraw from the association upon handing to the secretary his resignation, in writing, and a paper releasing the association from all claims.

Article III.—*Officers.*

Section 1. A board of seven (7) trustees shall be annually appointed by the superintendent of the Midvale Steel Company, in the first week in January, from among the members of the association, to serve during the ensuing year, or until their successors are appointed.

Vacancies occurring in this board shall be filled by the superintendent of The Midvale Steel Company.

Section 2. At the first regular meeting of the new board of trustees they shall elect from among their own number, a president and secretary of the association. They shall also elect, at the same meeting a treasurer of the association, who shall not be a trustee; all to serve during the ensuing year, or until their successors are elected.

Any vacancy occurring in the above offices shall be filled by the board of trustees.

Article IV.—*Duties of Officers.*

Section 1. *President.* It shall be the duty of the president to preside at all meetings of the trustees, and during the interval between their meetings to have general supervision of the affairs of the association, always subject to such rules as may be made by said trustees, and in all cases and under all circumstances, accountable to them for all acts not previously authorized.

Section 2. *Treasurer.* It shall be the duty of the treasurer to collect all fees and dues from the members, through their attorney, *i. e.*, the treasurer of The Midvale Steel Company, and to hold or invest the funds of the association under the direction of the trustees. He shall pay orders for money drawn, as hereinafter provided for. He shall make a monthly report to the trustees of the financial affairs of the association, and when directed so to do by the president, shall attend the meetings of the trustees.

Before entering upon the duties of the office he shall give bonds to the trustees for the due and faithful discharge of the duties thereof, in such sum as the trustees may fix and determine, with sureties to be approved by them and also by the president or the superintendent of the Midvale Steel Company.

Section 3. *Secretary.* It shall be the duty of the secretary to keep a careful record of the meetings of the trustees, and to perform such other clerical work as they may direct.

ARTICLE V.—*Fees and Dues.*

SECTION 1. Each member of this association shall pay an entrance fee of fifty (50) cents, and weekly dues amounting to five (5) cents.

SECTION 2. No dues shall be exacted from any member of the association for any week in which he earns no wages.

SECTION 3. Each member shall, upon joining the association, give to the treasurer of the Midvale Steel Company a power of attorney in such form as shall amount to an assignment of his wages *pro tanto*, authorizing him to take from his (the member's) weekly wages the sum of fifty-five (55) cents, for that current week, and five (5) cents per week for each week thereafter; also to retain the sum of fifty (50) cents from his wages whenever the treasurer of the Midvale Steel Company shall receive from the president of the association a request to deduct from the wages of each member of the association fifty (50) cents, on account of a benefit to be paid upon the death of a member. All moneys deducted or retained from the wages of members of the association by the treasurer of the Midvale Steel Company shall be delivered weekly to the treasurer of the association.

SECTION 4. Any member losing his right of membership in consequence of leaving or being discharged from the service of the Midvale Steel Company, can, if reinstated in said service, again become a member of the association, upon filing a new application, as required in Article II, Section 2.

ARTICLE VI.—*Benefits.*

SECTION 1. The weekly benefits to be awarded during each three (3) months shall be determined upon by a majority of the trustees present at their meetings in January, April, July and October; and in case of a failure at any meeting to designate, the amount theretofore existing shall continue; the sums so determined upon to be based upon the financial condition of the association at the time of such meeting; provided that the weekly benefits shall not exceed five (5) dollars per week. This action of the trustees shall be published to the members by the secretary. Benefits shall be paid, *pro rata*, for fractions of a week lost through accident in the works; provided that no benefits shall be paid for less than two consecutive days so lost.

SECTION 2. In the event of any member becoming disabled or incapacitated for service by an accident in the works, the trustees shall draw an order upon the treasurer for the amount of benefits herein provided. In such case the amount shall be paid to the member disabled; and in all cases the settlement shall be made as soon as practicable after disability occurs; but not more than sixty (60) dollars shall be paid to any member for disability caused by one accident. In case any member be injured by an accident in the works, and die within three (3) months thereafter, and it be proved to the satisfaction of the trustees that his death was caused by and was the result of such accident, the trustees or a majority of them shall, through their president, request the treasurer of the Midvale Steel Company to deduct fifty (50) cents from the wages of each member of the association. They shall also order, as hereinafter provided, that the treasurer of the association shall pay the amount so obtained to the beneficiary named upon the deceased member's application for membership. In case the person designated in the application shall die before the death of the member, the member may, by a writing under

his hand and seal, designate another person. And in the event of the death of the member without any such new designation, the benefits shall be paid to the person or persons who would be his heirs at law, according to the intestate laws of the State wherein he resided at the time of his death.

Section 3. Any employé of the Midvale Steel Company, after having been ten (10) years, consecutively, a member of the association, may, at the discretion of the trustees, or of a majority of them, exercised at a regular meeting, receive from the treasurer a sum equal to the amount of dues paid by him during that term of membership; it being, however, distinctly understood that action of the trustees, in such cases, is entirely optional with them; but if such action be taken, it must be based upon the character of service of such member with the Midvale Steel Company, and be subject to the approval of the superintendent of said company.

Section 4. The moneys which shall become due and payable under the provisions of these by-laws shall be payable only to the member himself, or to his nominee in case of death; and shall not be subject to or affected by any attachment or execution process whatsoever against such disabled member or his nominee.

Section 5. The trustees shall decide at a stated or special meeting whether the accident has been sufficient to cause disability or death. The certificate of a physician, considered by the trustees to be in good standing, may be sufficient evidence of the fact. The vote of a majority of the trustees present at a meeting shall be final and conclusive as to the rights of any claimant.

Section 6. All orders drawn for benefits must be signed by not less than (3) of the trustees, and shall be countersigned by the secretary of the association.

Article VII.—*Meetings.*

Section 1. The annual meeting of the trustees shall be held in Philadelphia on the third Tuesday in January of each year, and stated meetings on the third Tuesday in April, July and October of each year; and special meetings shall be held upon call of the president, or upon written application made by three (3) trustees to the secretary. Notification of every meeting shall be sent by the secretary to each trustee at least one (1) day before such meeting.

Section 2. Four (4) members of the board of trustees shall constitute a quorum.

Article VIII.—*Reports*

It shall be the duty of the trustees to make a full, detailed report of the affairs of the association, and to submit a copy of the same each year, on or before January first, to the president and superintendent of the Midvale Steel Company for their approval.

Article IX.—*Amendments.*

These laws may be altered or amended by a vote of a majority of the board of trustees; provided the alterations or amendment shall have been proposed and entered on the minutes of the board at least thirty (30) days previous to action thereon.

Notice of alterations or amendments shall in all cases be communicated to the members of the association by the secretary before action

thereon is taken; and all alterations or amendments so made, before having effect, must be submitted to and approved by the president or superintendent of the Midvale Steel Company.

JOHN B. STETSON BENEFICIAL ASSOCIATION.

PHILADELPHIA, *December 8, 1887.*

Mr. ALBERT S. BOLLES,

Chief of Bureau, Department of Internal Affairs, Harrisburg, Pa.

DEAR SIR: Replying to your favor of the 5th inst., would say, we have an organization in our factory known as the John B. Stetson Beneficial Association; the dues are twenty-five cents per month for persons over eighteen years of age and fifteen cents per month for those under eighteen years; the benefits are $5.00 and $3.00 per week respectively; no person is allowed to draw more than five weeks benefits in one year; the assessments are twenty-five and fifteen cents, and the death benefits $100.00 and $75.00 respectively; we do not average more than four assessments per year. We enclose reports of the association for the past four years. We will be pleased to furnish you with any further information you may desire.

Very respectfully yours,

JOHN B. STETSON & CO.

The following is an epitome of the report for 1886:

Cash balance, last report,		$398.54
Total amount received for year ending November 9, 1886,		2,027.00
Total amount paid for sick benefits, as below, for year ending November 9, 1886,	$1,706.00	
Physician's services (1 year),	300.00	
Printing, etc.,	5.85	
Balance in Treasury,	413.69	
	$2,425.54	$2,425.54

STRAWBRIDGE & CLOTHIER SAVING FUND.

PHILADELPHIA, *December 5, 1887.*

Hon. ALBERT S. BOLLES,

Chief of Bureau of Industrial Statistics, Harrisburg, Pa.

DEAR SIR: Answering your letter of December 3d, we send you herewith, a copy of the rules and regulations of societies that exist among our employés, and also enclose a report which we clipped from a late number of the "Daily Press," which report was made to the New Century Guild of Working Women, who sent a committee to our store to make an investigation in the same line as your inquiries.

If the documents which we enclose do not give you sufficient information, we will be happy to answer any questions you may desire to ask us.

Yours respectfully,

STRAWBRIDGE & CLOTHIER.

By-Law of the Strawbridge & Clothier Saving Fund.

Name.—This association shall ke known as the "Strawbridge & Clothier Saving Fund."

Object.—The object shall be to stimulate a desire to save money, and enable the members to lay aside a small fixed sum each week.

Shareholders.—Any employé of Strawbridge & Clothier may, on application, become a shareholder; first conforming, however, to such regulations as the association or board of directors may enact. To assist in defraying expenses, a fee of fifteen cents shall be charged to each applicant.

Shareholders leaving the employ of Strawbridge & Clothier do not necessarily cease to be members of the association until the end of the fiscal year.

Officers and their Duties.—The officers shall consist of a president, vice president, secretary, treasurer and nine directors, all of whom shall constitute a board of directors. Elections for officers shall be by ballot and held at the annual meeting, which shall take place as near the first day of March in each year, as may be convenient; those receiving the highest number of votes shall be elected, and their term continue until their successors are chosen.

The President shall preside at all meetings of the board of directors, sign all proper orders drawn upon the treasurer, when attested by the secretary, and attend to all duties usually performed by such an officer. The duties of the president shall in his absence devolve upon the vice president.

The Secretary shall keep full and correct minutes of the association and board of directors, and give timely notice of all meetings; keep a correct list of all shareholders, their names, addresses and number of shares; receive and receipt for all dues, and turn the same over to the treasurer immediately, taking his receipt therefor.

He shall notify the board of all arrearages; attest all money orders authorized by the board, and attend to such other duties as he may be called upon to perform. He is authorized to appoint such deputies as he may deem necessary to aid him in promptly collecting dues, or devise and execute such other methods of collection as may be approved by the board.

At the close of the year he shall submit his books, accounts and documents, for auditing, to a committee appointed at the last monthly meeting of the board. He shall receive such compensation for his services as the board shall determine.

The Treasurer shall receive and receipt for all moneys collected by the secretary; keep full and correct accounts of all receipts and expenditures, reporting the same monthly; pay all orders properly drawn and attested; make investments as the board shall direct, and perform such other duties as are incident to his position. At the close of the year he shall submit his books, accounts, and documents, for auditing, to a committee appointed at the last monthly meeting of the board.

The Board of Directors shall meet on the second Monday in each month, and five members shall constitute a quorum.

A member thereof absenting himself from three consecutive meetings of the board shall be considered as having resigned, and his place be filled by the board; and all vacancies occuring in any office, by death, resignation or otherwise, shall be filled in the same manner.

The board shall have power to appoint a chairman (not necessarily a member of the association) to preside at the annual meeting.

Subscriptions.—The sum of twenty-five cents per week shall be paid into the association for each and every share. No person shall hold

more than twenty shares; nor shall any shareholder transfer interest in the association to another shareholder At the meetings of the association shareholders shall be entitled to but one vote, irrespective of the number of shares they possess, and no voting by proxy shall in any case be allowed. All shares paid up for the year must be paid to the secretary, and not to the collector.

Investments.—Whenever the sum in the treasury shall amount to one hundred dollars, or over, it shall be invested by the board of directors, in the name of the president, secretary and treasurer, as trustees, their successors and assigns. Such investments shall be withdrawn or changed only upon their joint order.

Loans.—Any shareholder may obtain a loan for a period of not less than one month, and for a sum not exceeding nine-tenths of the amount paid in. A note to the order of the treasurer shall be given by said shareholder for the amount, with interest, payable at the time the note is issued, at the rate of six per cent. per annum. Which being presented to the secretary, he shall issue an order on the treasurer for the amount. A charge of ten cents shall be made for each loan. Repayments of loans must be made directly to the secretary.

Withdrawals.—Shareholders may at any time withdraw upon giving one week's notice to the secretary. The amount paid in, less fines or charges, shall be refunded without profits to the withdrawer.

To provide for emergencies, the board of directors may, if they think proper, waive the aforesaid one week's notice.

In case of the death of a shareholder, the amount paid into the association, less losses, fines or loans, may be paid to the heirs, executors, or administrators immediately.

Fines.—Dues shall be payable before 9 A. M. on each and every Saturday, and remaining unpaid thereafter shall be considered as in arrears and subject to fine. Fines shall be charged at the rate of one cent per week for each and every share, and in case of arrears for four weeks the shares shall be considered as withdrawn.

The books shall remain open for subscriptions until April 1st of each year, but subscriptions must begin as of March 1st. The current year begins March 1st, and ends on the last day of February.

The series of each year shall be closed as soon after the end of the year as practicable, and a new series issued. The funds on hand, after liabilities are paid, shall be divided, *pro rata*, among the shareholders who continue until the close of the year.

Upon receiving a written request from ten shareholders, the president shall call a special meeting of the association, stating the object thereof; and he shall call a special meeting of the board of directors in like manner upon receiving a written request from three of its members. At all special meetings no other business shall be transacted than that mentioned in the call.

Amendments or Alterations of these rules can only be made, after ten days notice thereof, at a special meeting of the association called for that purpose, and upon the written request of ten shareholders; and a two-thirds majority of the members voting shall be required to effect such change.

In all cases not otherwise provided for, a majority vote shall rule.

By-Laws of the Strawbridge & Clothier Relief Association.

Article I.—*Title.*

This association shall be known by the name and title of the Strawbridge and Clothier Relief Association.

Article II.—*Objects.*

This association has for its objects the relief of any member who shall be detained from business on account of sickness, disability, or accident, and the raising of a benefit fund in case of the death of a member.

Article III.—*Meetings.*

Section 1. The annual meeting of this association shall be held in in January of each year, for the transaction of general business. Special meetings shall be called by the president upon the written request of seven members of the association, stating the reason for same, and no business shall be transacted at these meetings other than that for which the meeting was called. The time and place of meeting shall be designated by the president.

Section 2. The chairman of the annual meeting shall preside by invitation of the board of managers, and need not necessarily be a member of the association.

Article IV.—*Membership.*

The members of this association shall consist of employés of Strawbridge & Clothier, excepting cash boys.

Article V.—*Officers.*

The officers of this association shall consist of a president, vice-president, secretary, treasurer and nine managers (four ladies and five gentlemen), five of whom shall constitute a quorum, and shall be elected by ballot annually, at the stated meeting in January. The person receiving the highest number of votes cast, shall be declared elected.

Article VI.—*Duties of Officers.*

President.

The president shall preside at all meetings of the board of managers and special meetings of the association, sign all orders on the treasurer when properly attested, have power to order all assessments, appoint all committees not otherwise provided for, and perform such other duties as the association in their by-laws may enjoin on him. In the absence of the president, these duties shall devolve upon the vice-president.

Article VII.—*Secretary.*

The secretary shall keep correct minutes of all the proceedings of the association and the board of managers, notify members of all assessments and receive all returns from same, to be handed to the treasurer, taking his receipt therefor; shall present monthly to the board of managers the reports of relief committees and physicians' certificates, likewise the names of all members who, by reason of neglect or otherwise, have failed to pay their assessments, with their

reasons, if any; shall draw and attest all orders upon the treasurer, and perform such other duties as may be required of him. For the performance of these duties he shall receive such compensation as the board of managers may from time to time determine upon.

Article VIII.—*Treasurer.*

The treasurer shall take charge of all the funds of the association; pay orders only upon the order of the president, attested by the secretary; keep a full and correct account of all receipts and expenditures; shall notify the secretary when the condition of the treasury requires an assessment; shall present a monthly report to the board of managers of the condition of the treasury, and an annual report at the stated meeting of the association.

Article IX.—*Board of Managers.*

Section 1. The board of managers shall have a general supervision of the association. They shall meet upon the first Monday of each and every month, to hear reports of the treasurer, visiting committees, and physicians' certificate; and to decide all appeals from decision of the secretary.

Section 2. Members of the board absent for three successive meetings (unless by reason of sickness, or some unavoidable cause), shall forfeit their right as managers, and the board may declare a vacancy and fill the same.

Article X.—*Applications.*

Applications for membership must be made to the secretary in writing, stating the name, residence and department in which the applicant is employed, and accompanying the same with an admission fee of fifty cents. Applicants may designate in their application or at any time thereafter in writing, to whom in case of death, death benefits are to be paid.

Article XI.—*Assessments.*

Section 1. Every member of this association shall pay an assessment of twenty-five cents upon the call of the secretary, whenever the funds in the treasury are reduced to $100.00 (one hundred dollars), said assessment to be paid within one week from date of call. Any member failing to pay within that period shall be considered a delinquent, and not be accounted a member of the association, unless re-admitted in the usual form, or by special act of the board of managers.

Section 2. Members absent from the store when an assessment is called, will have their notices mailed to the last address furnished the secretary, and this shall constitute a notice of said assessment.

Section 3. Any member away from the store on a vacation when an assessment is called shall be excused, if payment of such assessment is made upon returning to store.

Article XII.—*Benefits.*

Section 1. Any member unable, by reason of sickness or accident, to attend to his or her usual business, *shall notify the secretary in writing within three days after the occurrence of the disabling cause*,

stating the nature of the disability and furnishing name and residence; should said notice not be received by the secretary within specified time, benefits will only be allowed three days prior to receipt of same. The secretary shall then report the call to a visiting committee, and upon their reporting favorably, said member shall be entitled to receive benefits as follows: The sum of five dollars per week, payable weekly; no benefits to be allowed for less than one week's illness, nor for a longer period than fifteen weeks in any one year, beginning said year with the date of first week's benefits. No one shall be entitled to benefits until he or she has been a member of the association two weeks.

Section 2. Members residing at such a distance from the store as to make it inconvenient for the committee to visit them, shall furnish a physician's certificate as to their condition, and continue to furnish such certificate every week during their disability.

Section 3. Upon the death of a member an assessment shall be called immediately; the person designated in writing by the deceased shall be receive $100.00. In case no one is so designated the benefits shall be paid to the legal heirs.

Section 4. Any assessment called during the illness of a member shall be deducted from the amount due.

Section 5. Any member receiving benefits from this association, who may be found imposing thereon by feigning sickness or disability, shall be expelled by the board of managers, and shall not be re-admitted to membership.

Article XIII.—*Committees.*

The visiting committee shall be selected by the secretary, and consist of one or more members at his discretion. Their duty shall be to visit all applicants at least once in each week during their illness, and report to the secretary (upon blanks furnished by him) the condition of said applicant, and his or her right to receive benefits. In addition to the visiting committee, the association shall secure the services of a reputable physician to be instructed to call on sick members, at the discretion of the secretary or board of managers, *first giving the members the option of furnishing a certificate from their own regular physician, with the express understanding that, if the latter is preferred, the certificate is to be rendered at the latter part each and every week's illness or disability.*

Article XIV.—*Collectors.*

Section 1. The board of managers shall, at their meeting in January, and annually thereafter, appoint fifteen members of the association, selected from the various departments, to collect assessments, to be handed to the secretary.

Section 2. It shall be the duty of collectors to present assessment notices promptly, and in the event of them remaining unpaid on the last payable day, shall call the attention of the members to the fact; the names of all delinquents, with their reasons, if any, to be reported to the secretary.

Article XV.

All necessary expenses shall be defrayed by the association upon the order of the board of managers.

AMENDMENTS.

No alterations or amendments to these by-laws shall be made except by a two thirds vote of all members present at a stated meeting, or a special meeting called for the purpose, and one month's notice of such proposed change shall be required before it can be acted upon.

THE CHESTER ROLLING MILLS.

THURLOW, PA., *October 10, 1887.*

HON. ALBERT S. BOLLES,

Chief of Bureau of Industrial Statistics, Harrisburg, Pa.

DEAR SIR: Replying to your inquiry contained in form No. 2, would say that we have a relief fund connected with our works, which is kept up by the employees principally by the payment of ten cents per week, and at the end of each year settlement is made and a dividend returned to all belonging to it. In cases of accident to any of our employès, it is our custom to pay all medical charges and continue the wounded on pay roll until fully recovered. We also do this with some of our worthy employès when taken sick and are in need. The aggregate amount expended in this way cannot be ascertained on account of keeping names on pay rolls, and making no note of it. It amounts to several hundreds of dollars in a year.

Yours truly,
C. B. HOUSTON,
Treasurer.

Constitution and By-laws of the Baldwin Mutual Relief Fund Association of Philadelphia.

PREAMBLE.

WHEREAS, These whose names are hereby subscribed have associated themselves together, for the purpose of mutual assistance to the members and their families in case of accident, sickness or death, out of a fund to be paid by general contribution of the members in season of health and prosperity, thereby as far as in their power to mitigate the severity of individual misfortune and distress, and for our government we do hereby adopt the following constitution and by-laws:

CONSTITUTION.

ARTICLE I.—*Of the Name, Style and Title.*

This Association shall be known by the name, style and title of Baldwin Mutual Relief Fund Association, of Philadelphia, Pa. Instituted March 19, 1866. Incorporated April 29, 1870. It shall meet once a month, at such time and place as they from time to time direct in the by-laws. A special meeting to be held when requested by eleven members which number shall constitute a quorum.

ARTICLE II.—*Officers.*

The elective officers of this association shall consist of a president, vice president, secretary, assistant secretary, treasurer, a board of trustees composed of three members, and two stewards to be elected annually.

Article III.—*Membership.*

Section 1. Any person in sound health wishing to become a member of the association after having been in the employ of the Baldwin Locomotive Works for the period of three months, shall make application to the secretary, who shall report him to the investigating committee for their action

Section 2. Any member leaving the employ of said firm may retain his membership by conforming to the constitution.

Section 3. No person shall be recognized a member until he has signed the constitution.

Section 4. No person shall be admitted a member who shall be under 21 or over 45 years of age.

Section 5. Each application must be made to the secretary, in writing at a regular stated meeting accompanied by the name of the proposer, and the amount of the admittance fee which shall be returned in case the candidate shall be rejected; if reported favorably by the investigating committee, a ballot shall be taken at the next stated meeting, and if not more than two black balls shall appear against him he shall be declared elected, and by signing the constitution he shall be declared a member, but if more than two blacks balls shall appear against him, he shall be declared rejected.

Section 6. Any person who shall be elected a member of the association must sign the constitution within sixty days after his election, otherwise he shall forfeit his entrance fee and all rights to membership under that application and election.

Section 7. This association shall be limited in numbers as the by-laws may prescribe.

Article IV.—*Privileges.*

This association shall have a seal to alter or renew at pleasure, expel any member who may defraud or attempt to defraud the association, who shall be convicted of offense in any court of justice, be guilty of any unnatural abuse that may be injurious to himself, or family, or breach of any of the laws of the United States or State of Pennsylvania; but no member shall be expelled without one month's notice, giving the member a chance to be heard in his own defense. This association shall have power to hold real estate, to invest its surplus funds in any manner that may appear advantageous to the association, but the yearly income of any real or personal estate held by the association shall not exceed $3,000.

Article V.—*Duties of Officers.*

Section 1. It shall be the duty of the president to preside at all meetings, to preserve order therein, to sign all orders drawn on the treasurer, to call special meetings when requested by eleven members in writing, to decide all questions of order subject to an appeal to the association, order all fines to be imposed, and declare members suspended when reported by the secretary as liable to suspension, and perform all other duties imposed upon him by the constitution and by-laws.

Section 2. *Of the Vice President.*—It shall be the duty of the vice president in the absence of the president to preside at all meetings, and perform all other duties pertaining to that office.

Section 3. *Of the Secretary.*—It shall be the duty of the secretary to attend all meetings of the association, take minutes of the proceed-

ings, attend to all correspondence, and notify members of their election, make out all orders to be drawn on the treasurer, keep an accurate account of the receipts and expenditures of the association, and perform all other duties enjoined upon him by the constitution and by-laws, and at the expiration of his term in office, present a written report, and deliver to his successor all books and papers he holds by virtue of his office, for which he shall receive such compensation as the by-laws shall specify.

SECTION 4. *Of the Assistant Secretary.*—It shall be the duty of the assistant secretary to act in the absence of the secretary, he shall also have charge of a check roll book, and shall credit each and every payment by the members.

SECTION 5. *Of the Treasurer.*—It shall be the duty of the treasurer to receive all moneys payable to the association as dues and fines, and give his receipt for the same in a book kept for that purpose, pay no money unless by an order signed by the president, and attested by the secretary; he shall keep his books ready for inspection at any time the association shall require to see them, and perform all other duties the association may demand, and before entering on his duties he shall enter security not less than $500.

ARTICLE VI.—*Trustees.*

SECTION 1. It shall be the duty of the trustees immediately after the election of a treasurer, to procure from him a bond with the security required by the association, to deposit all surplus funds that may be in the treasury, to make such other disposition thereof as the association may from time to time direct, and report their transactions in writing at the next stated meeting of the association. They shall assist in auditing the books of the association and custodians of all property, it shall also be their duty to invest all moneys of the association and place all evidences of such investments in the hands of the treasurer for safe-keeping, and pay to the secretary at regular stated meetings of the association, amounts of interest as they receive it, and deliver up to their successors in office, all books, papers, etc., they may have in their possession.

SECTION 2. *Of the Stewards.*—It shall be the duty of the stewards, when notified, to visit a sick or disabled member at least once a week during such sickness or disability, and render to such member during that time such benefits as the by-laws prescribe, taking his receipt for the same in a book kept for that purpose, and report the same at the next stated meeting.

ARTICLE VII.—*Dues and Fines.*

SECTION 1. The admittance fee to this association shall be such as the by-laws shall prescribe. The monthly dues shall be 50 cents payable in advance.

SECTION 2. Any member who shall be indebted to the association to the amount of three months dues shall be considered in arrears, and if he is taken sick or disabled while in arrears he shall not be entitled to benefits until the expiration of one month after such indebtedness is fully paid, neither shall he be entitled to benefits at the time such payment was made.

Article VIII.—*Auditing.*

The president shall at the stated meetings in December and June, appoint a committee of three, whose duty it shall be to audit the account of the association.

Article IX.—*Amendmenls.*

No alteration or amendment to the constitution or by-laws shall be made except the same shall be presented in writing at a stated meeting when it shall be laid over until the next stated meeting at which time if adopted by two-thirds of the members present, it shall become a part of it and not otherwise.

Article X.—*Re-instatement.*

Section. 1. Any member of this association suspended for non-payment of dues, desiring to be re-instated, can do so upon the payment of a proper fee.

Section 2. The fee to re-instate a member within one year after being suspended for non-payment of dues shall be the amount of one year's dues and fines; the fee to re-instate a member one year after being suspended for non-payment of dues shall be the fee charged for a new member of the same age, and shall be governed by the same laws in reference to benefits.

BY-LAWS.

Article I.—*Meetings.*

Section. 1. This association shall meet on the third Friday evening of each month, at 8 o'clock. Eleven members shall constitute a quorum for the transaction of all business.

Section 2. At the time specified for a meeting, if a quorum be present, the president shall call the meeting to order, and shall call to business in the order hereafter prescribed. But in the absence of any or all of the elective officers, the members shall have power to appoint officers, president, treasurer; and all business transacted by them shall be valid. He shall then proceed with the following

Order of Business.

No. 1. The roll shall be called, and each member upon answering to his name shall pay his monthly dues and fines that he may be indebted to the association.

No. 2. Minutes of the preceding meeting read.
No. 3. Investigating and other committee reports.
No. 4. Trustees to report in writing when they transact business.
No. 5. Stewards' report.
No. 6. Treasurer's report.
No. 7. Election of applicants.
No. 8. New business.
No. 9. Application for membership.
No. 10. Roll call—second time.
No. 11. Nomination and election of officers.
No. 12. Delinquent members.

Article II.

Section 1. The roll shall be called the second time, after which no dues or fines shall be received.

Article III.—*Duty of Officers.*

The President.—The president, or in his absence, the vice-president, shall preside at all meetings of the association; preserve order therein; put all motions to vote; appoint all officers not otherwise provided for; give the casting vote, and direct the secretary to call special meetings when requested by eleven members, in writing, or any other time he may deem expedient; sign all orders drawn on the Treasurer; see that all officers and committees attend to their respective duties. He shall at the stated meetings of the association appoint an investigating committee of three members, to serve for the ensuing month, and to attend to such business as the office may require.

Article IV.

Section 1. *The Secretary.*—The secretary shall keep a fair and impartial record of the proceedings of the meetings, and read the proceedings of each meeting at next stated meeting of the association.

Section 2. He shall call the roll at each stated meeting, and note absentees, and report each member who may be six months in arrears to the association, at which time their name may be erased.

Section 3. He shall attest all orders drawn on the treasurer that are signed by the president, provided the same are in conformity with the constitution and by-laws.

Section 4. He shall assist at the examination of all the books and and papers belonging to the association; and shall have all his books open, ready for inspection, semi-annually, in December and June, and at all other times the association may require to see them.

Section 5. He shall indorse all applications for benefits, whether for sick or deceased members, with the words entitled to benefits, if the applicant be so entitled, together with the date he received such application, and forward the same to the stewards, and such attestation shall be deemed by them as final. Should he receive an application for benefits from a member who from any cause is not entitled to benefits, he shall return it to him with an explanation of the cause of its return.

Section 6. He shall keep one of the keys of the property chest, and have the same in time for the opening thereof.

Section 7. As a compensation for his services he shall receive $2.00 per night, and dues reported payable semi-annually.

Section 8. He shall pay a fine of $2.00 for neglecting or refusing to attend any meeting of the association, or to perform any other duty required of him by the association; and for refusing to deliver all books, papers, or other property in his possession belonging to the association to his successor in office, he shall pay a fine not exceeding $5.00.

Section 9. He shall notify members, as far as possible, of any special meeting; and shall report in writing at all stated meetings the amount of money received according to his books.

Section 10. He shall notify all members of the association who are five months in arrears, informing them of their indebtedness to the association, at least two weeks before the stated meeting at which their names be erased.

Article V.

The Treasurer.—The treasurer shall pay no money without an order

signed by the president, and attested by the secretary; and shall take receipt for all moneys paid out by him, and also all moneys received in a book kept for that purpose. He shall render a just and correct account of his receipts and expenditures to the association at every stated meeting. He shall at the annual meeting of the association, pay over all moneys, and deliver to his successor all books and papers belonging to his office. For the true and faithful performance of his duties herein-mentioned, he shall give bond to the association with one or more sufficient securities, as the association may from time to time require. He shall report at every stated meeting the amount of money paid and received by him, in writing, during the preceding month, and the balance remaining in his hands. He shall have in his hands sufficient funds to defray expenses and for the relief of sick or distressed members.

Article VI.

Section 1. *The Trustees.*—The trustees shall deposit all funds over $200.00 held by the treasurer in the name of the association, and where the association may direct. All moneys, bonds, or other valuable papers on deposit in the name of the association, shall be drawn by the trustees only, on an order signed by the president and attested by the secretary, with the seal of the association attached.

Section 2. In investing the funds of this association no money shall be loaned on any property on which there are any previous incumberance.

Article VII.—*Duties of Stewards.*

Section 1. They shall attend on all the nights of meeting, and on each members' name being called and answered, receive the amount due the association, which they shall pay over to the treasurer, and take his receipt for the same, and at the same they shall inform the secretary, in writing, of the amount received during the evening.

Section 2. They shall visit all sick members within two miles of the meeting hall, whose applications are properly attested, except those sick of contagious diseases, within twenty-four hours after having received such application; and if, in their opinion, such members are worthy of benefits, they shall at the expiration of seven days from the date of the secretary's indorsement, pay to him such weekly sums as are provided for by the by-laws; and each steward continue their visit at least once a week during such illness; and in the event of any case appearing doubtful to them, they shall have power to call in a respectable physician whose opinion, in writing, shall be decisive. And if the said physician be of opinion that the applicant is able to follow his usual or any other business whereby he can gain a livelihood, they shall immediately stop his benfits, and report the same at the next meeting. But the fare paid by them when visiting members residing more than two miles from the meeting hall, shall be returned to them by the association.

Section 3. They shall, on application for benefits for deceased members or their wives, when such application is properly attested by the secretary, pay the amount to be paid to the deceased member's legal representative, and take a receipt for the same.

Section 4. In case of a disagreement between the committee, payment shall be stopped until the next meeting.

SECTION 5. They shall report, in writing at each stated meeting, all the business transacted by them during the preceding month; and shall perform such other duties as the association may from time to time enjoin on them; and for their services shall receive the sum of of $2.00 each, per month, and dues remitted.

SECTION 6. They shall pay a fine of $2.00 for each and every neglect of performing the several duties enjoined on them by the by-laws and constitution, or resolutions of the society.

ARTICLE VIII.—*Fines.*

SECTION 1. Any officer absenting himself from a meeting of the association shall pay a fine of 50 cents, only remitted in the following cases—sick or absent from the city. This article does not apply to the secretary or stewards.

SECTION 2. Any member neglecting to inform the secretary, after having changed his residence, at the next stated meeting, shall pay a fine of 25 cents.

SECTION 3. These fines shall be assessed by the secretary, and shall not be remitted unless by a two-thirds vote of the association, and no dues shall be received unless accompanied by the full amount of the fines.

ARTICLE IX.

Any person being proposed shall pay an admittance fee as the association may direct, and shall be called into the room to answer the following questions previous to his election, which shall be put by the president in the presence of the members, and having answered satisfactorily he shall withdraw.

Question. 1. Sir, you are called upon to answer the following questions, it is expected you will solemnly declare the truth to the best of your knowledge and belief, for should you not, and should it hereafter be disclosed, you will be expelled and forfeit all claims.

Question 2. Your name; third, your age; fourth, are you, to the best of your knowledge and belief, free from all bodily complaints and infirmities?

Question 3. Are you acquainted with our constitution and by-laws? Will you as a good member ought to do support them? Sixth, Should you hereafter feel yourself aggrieved by the association or any of its members, will you be willing, and do you hereby agree to refer your case to arbitration and abide by the decision as final, so as to obviate the necessity of law proceedings between you and the association or any member thereof?

ARTICLE X.—*Fees and Dues.*

SECTION 1. Every person on being elected a member of this association shall pay into the treasury an initiation fee according to his age, viz:—From 21 to 25 years, $1.00; from 25 to 30 years, $2.50; and an addition of 50 cents for each year over 30 up to 45 years, above which no person can be admitted.

SECTION 2. Each member shall pay a monthly due of fifty cents in advance, and such assessments as may from to time be imposed upon him, and a fine of 10 cents shall be imposed for each month he shall fail to pay his dues.

SECTION 3. When a member becomes three months in arrears for dues, he shall be ineligible to office, and shall not be allowed to take

part in any of the proceedings of the association, and if he becomes six months in arrears after having been notified by the secretary his name shall be erased.

Section 4. At the death of a member each surviving member shall pay an assessment of 25 cents, providing there is less than $200.00 in the treasury.

Article XI.—*Benefits.*

Section 1. No member shall be allowed to draw benefits until he shall have been a member six months.

Section 2 A beneficial member who shall be unable to attend to his work through sickness or accident, shall receive $5.00 per week for the first six months; $4.00 for the second six months; and $3.00 per week for a longer period, and shall receive but the same for the same sickness until he has been off of the sick roll for one year.

Section 3. In case of the death of a beneficial member in good standing, the sum of $60.00 shall be paid his widow or legal representative without delay. Upon the death of the wife of a beneficial member the sum of $30.00 shall be paid him.

Article XII.—*Nominations and Elections.*

Section 1. Nomination of candidates for office shall be made one meeting previous to the night of election, should all the candidates for any office decline the nomination, nominations for such office may be made on the night of the election.

Section 2. The president, vice president, secretary, treasurer, three trustees and two stewards, shall be elected at the stated meeting in December.

Section 3. At an election the ballot box shall be in view of the president, who shall appoint two tellers to assist him in conducting the election.

Section 4. Should there be no choice on the first ballot for any officer, the lowest candidate shall be dropped, and a second ballot be had, and so on until a choice be made.

Section 5. In case of the death, resignation or removal of any officer, the vacancy shall be filled by the election of another person for his unexpired term of which election the secretary shall give notice at the next stated meeting after such vacancy.

Section 6. A resignation from any officer shall be considered as a refusal to serve, and shall subject the member resigning to the same fine as if he had refused, unless he is about to remove from the city.

Article XIII.—*Application for Membership.*

Section 1. If any member shall be taken sick, he shall send a written notice to the secretary, stating that he is unable to attend to his business, and request a visit from the stewards.

Section 2. Any member being sick or disabled, living beyond the jurisdiction of the stewards, shall send a certificate stating the nature of such sickness or disability, said certificate to be signed by a physician, and an affidavit sworn to before a magistrate or justice of the peace.

Section 3. Any member who is sick or unable to attend to his business, shall notify the secretary in writing, who shall indorse such application, and hand it to the stewards. The benefits in all cases shall begin at the time the secretary shall receive such application.

ARTICLE XIV.—*Committee on Arbitration.*

The committee of arbitration shall be composed in the following manner:—The person aggrieved shall appoint one member, the association shall appoint one member, and the two select the third.

ARTICLE XV.—*Duty of Committees.*

SECTION 1. The investigating committee shall make strict inquiries into the character and standing of applicants for admission; they shall report the same at the next stated meeting, and shall notify the applicant of the time and place of such meeting.

SECTION 2. The chairman of any committee shall call the meetings of his committee, and notify the other members of the time and place of its meeting.

SECTION 3. Every committee shall make its final report in writing if required so to do, but if unable to report finally at any time when a report be called for, a clear and explicit report of their proceedings shall be given.

ARTICLE XVI.

This association shall be limited to two hundred and fifty members, and shall not be dissolved while there are eleven members willing to continue it.

ARTICLE XVII.—*Salary.*

SECTION 1. The secretary shall be paid his salary twice a year, viz: At the stated meetings in January and July, after the books have been audited, and all losses sustained by the association through him for the past year, deducted therefrom. Should the losses so sustained exceed the amount of his salary, he shall pay such excess at or before the next stated meeting, or be immediately expelled from office; but in case his resignation as secretary be accepted before the expiration of said year, he shall be paid his salary at the next stated meeting, or be immediately expelled from office; but in case his resignation as secretary be accepted before the expiration of said year, he shall be paid his salary at the next stated meeting after the said resignation has been accepted.

SECTION 2. The stewards shall be paid their salary semi-annually at meetings mentioned above, viz:—in January and July.

THE JOHN WANAMAKER INSURANCE ASSOCIATION.

Hon. ALBERT S. BOLLES,

Chief of Bureau of Industrial Statistics, Harrisburg, Pa.

DEAR SIR: In reply to your letter of the 3d, I beg to hand you herein the constitution of the beneficial association in operation in our business. It has distributed, up to this time, not far short of fifty thousand dollars.

Yours truly,

JOHN WANAMAKER.

ARTICLE I.—*Name.*

This Association shall be known as "The John Wanamaker Insurance Association," and its object shall be the benefit of its members in case of illness, accident or death.

Article II.—*Membership.*

Section 1. All persons, employés of John Wannamaker, directly connected with his business house, shall be members of this association, which membership shall continue during the entire period of their employment by the said John Wanamaker. But upon the termination or ending of such service or employment, be it by resignation, discharge or otherwise, their membership in this association shall cease and end, and they shall forfeit all rights or benefits therein accruing by reason of such membership.

Sec. 2. It shall be necessary for all employés to be actually in the service of John Wanamaker three full months before they can become eligible to the enjoyment of sick or death benefits; and one month's assessment, payable in advance, before the expiration of the three months aforesaid, shall be made, in order to become beneficial in this association. But if during the three months' term of service, or immediately at the close thereof, the member should cease to be an employé of John Wanamaker, the advance assessment paid under this constitution will be refunded to the retiring employé.

Sec. 3. Any employé of John Wanamaker who shall be absent for three consecutive months shall forfeit his or her right of membership in this association, and shall not be eligible to either sick or death benefits after that period.

Sec. 4. If at any time it shall be the pleasure of the firm to reinstate a discharged employé, such person so reinstated shall be restored to the same rights and entitled to all benefits and privileges such person had in this association at the time of his or her discharge, and such person so reinstated shall not be obliged to again sign this constitution.

Sec. 5. The membership shall be divided into three sections: The first section shall consist of those who are in receipt of a weekly salary of $2.50 or less; the second section shall consist of those who are in receipt of a weekly salary of more than $2 50 and not more than $5.00; the third section shall consist of those who are in receipt of a weekly salary of more than $5.00.

Article III.—*Officers.*

Section 1. The officers of this association shall be a president, vice president, secretary, treasurer and six directors, who, together with one member of the firm, shall constitute a board of directors.

Sec. 2. The said officers shall be elected annually, by ballot, by the heads of all the departments, (each acting as the representative of the people in such department), on the second Tuesday of February in each year hereafter, and shall hold office until their successors are duly qualified.

Sec. 3. Immediately upon the adoption of this constitution there shall be an election of officers.

Sec. 4. Immediately after the above-named election the directors shall be divided by lot into three classes of two each. Those of the first class shall continue in office until the annual election of 1884; those of the second class until the annual election of 1885, and those of the third class until the anuual election of 1886,—and there shall be annually thereafter two directors elected to serve three years, to succeed those whose terms of office shall expire.

Sec. 5. In case any of said offices shall become vacant, from any

cause, the board of directors are authorized to fill such vacancy until the ensuing annual election, when the vacancy shall be regularly filled for the unexpired term.

ARTICLE IV.—*Duties of Officers.*

SECTION 1. *The President*—It shall be the duty of the president to preside at all meetings of the association, or of the board of directors; to call special meetings at the request of three members of the board; to sign all orders on the treasurer, and to perform such duties as appertain to this position.

SEC. 2. *The Vice Presidnnt.*—It shall be the duty of the vice president to perform the duties of the president in his absence.

SEC. 3. *The Secretary.*—It shall be the duty of the secretary to be present at all meetings, keep a correct record of the proceedings, attend to all correspondence, keep a list of the employés, and record all accessions and dismissals; to keep a list of all members applying for benefits, and to note the circumstances of each case; to make out all orders to be drawn on the treasury; to report to the board of directors, whenever called upon, the condition of the association, and to perform such other duties as may be provided herein, or such as may be indicated by the board of directors. He or she shall, before assuming the duties of office, duly execute a bond, with security, approved by the board, for the fulfillment of his or her duties, in such sum as the board may from time to time determine, and for the performance of these duties shall receive an annual salary approved by the firm.

SEC. 4. *The Treasurer.*—It shall be the duty of the treasurer to collect from the cashier of the firm the assessments as they may be levied, and to give a receipt for the same; to pay out of the funds in the treasury all sums authorized by the board of directors, to report to the board, whenever called upon, the condition of the finances of the association, and to perform such duties as may be provided for herein, or such as may be from time to time indicated by the board. The books shall be at all times open for the inspection of the board. He or she shall hand over the property of the association to his or her successor. He or she shall, before assuming the duties of the office, duly execute a bond, with security, approved by the board, for the faithful performance of his or her duties, in such sum as the board may from time to time determine.

SEC. 5. *The Board of Directors.*—The board of directors shall have general oversight of the business of the association, and the officers of the association shall at all times be subject to its control. It is specially authorized to decide finally all disputed claims for benefits; to grant special relief when occasion demands it; to employ physicians, nurses, or other outside help, and provide for their remuneration in its discretion; to increase the funds of the association by additional assessments or otherwise; and no assessments, beyond the regular monthly dues, shall be made without the express authority of the board. It shall meet at such times as it may provide, and at all meetings five members shall constitute a quorum for the transaction of business. In special cases, where long and faithful service has been rendered, the period wherein death benefits can be allowed may, at the option of the board of directors, be extended so it shall not in any case exceed one year; the death sickness to have been contracted while in the service of the house. Five per cent. of all assessments shall be set aside as a "provident fund," to be applied in cases

of illness where the usual ten (10) consecutive weeks may be deemed insufficient, such special benefits to require a two-thirds ($\frac{2}{3}$) vote of the board of directors.

Article V.—*Dues, Assessments and Benefits.*

Section 1. The monthly dues (and assessments in case of death) of each member of the first section shall be five cents; of each member of the second section, ten cents; of each member of the third section, twenty cents.

Sec. 2. All dues and assessments shall be deducted in the pay office of the firm, from the salary check of each member, and by it paid over to the treasurer of the association.

Sec. 3. Any member who shall be unable by reason of providential illness or accident, to follow any occupation for the space of one week or more, shall be entitled to benefits for a period not exceeding ten consecutive weeks; if a member of the first section, at the rate of $1.50 a week; if a member of the second section, at the rate of $2.50 a week; and if a member of the third section, at the rate of $5.00 a week. But for the first week only half benefits shall be paid, and no member shall be entitled to benefits for more than thirteen weeks in any current twelve months.

Sec. 4. In case of illness or accident, it is the imperative duty of the member to notify the association immediately, by sending the notice direct to the secretary. Benefits will not be granted unless notice is given; and in no case will benefits be allowed anterior to the time of giving the required notification, except by a majority vote of the board of directors.

Sec. 5. In case of the death of any member the treasurer shall pay to the legal representatives of the deceased, upon the order of the board of directors, if a member of the first section, the sum of $50.00; if a member of the second section, the sum of $100.00; and if a member of the third section, the sum of $200.00.

Article VI.—*Amendments.*

Amendments to this constitution shall be made at a meeting of the representatives of the departments, at which twenty shall be a quorum. Notice of the call of such meeting, and a copy of the proposed amendment, shall be posted conspicuously in the cloak-rooms at least ten days prior to the date of said meeting, and at said meeting it shall take a two-thirds vote of those present to adopt the proposed amendment.

PENNSYLVANIA RAILROAD MUTUAL RELIEF ASSOCIATION.

The following statement, which first appeared in the *Railroad Gazette*, has been sent to this Bureau by the railroad company in response to the above-mentioned letter:

The Pennsylvania railroad system includes the main line and branches of the Pennsylvania railroad proper; the Philadelphia and Erie railroad; the United railroads of New Jersey; the Northern Central; the Philadelphia Wilmington and Baltimore; the Baltimore and Potomac, and the two New Jersey companies, the West Jersey and the Camden and Atlantic, in all covering an extent of some 3,700 miles, with a force of 57,000 persons on their rolls.

The "Relief Fund" to which the employés of these lines are admitted, is operated under the joint auspices of these companies, by a department organized under the general title of "The Pennsylvania Railroad Voluntary Relief Department." Operations began in February, 1886, since which time, to October 1, 1887, the benefits paid have amounted to $362,000. This is made up of payments to "members of the fund" disabled by accident in the service, or by sickness, and amounts due the beneficiaries of deceased members.

The word "voluntary" in the title emphasizes the fact that there is no requirement that employés shall participate. On the contrary, none are at present admitted to membership until after six months' service, and there is an express provision that any member may withdraw on giving due notice.

The fund is derived chiefly from monthly contributions in advance, at fixed rates, each payment securing to the contributor, for disablement or death occurring in the month covered by it, the indemnity prescribed in the regulations. There are no assessments on account of special demands on the fund. For the convenience of the contributors, the amounts agreed to be paid for a given month are deducted from the wages on the rolls of the previous month. A member who earns wages in a month, is thus sure of being entitled to benefits for disablement or death occurring in the next month, without the inconvenience of making a special remittance, which he might neglect to do, and thus lose his standing in the fund.

The monthly amount to be paid by a member is optional with himself, and is determined by his application for membership at the time of entering the fund. Excepting in certain cases of long service, it cannot, however, be greater than the amount fixed for the class into which the person is entitled to enter. This is determined by his usual earnings

There are five classes, the first including those whose usual earnings do not exceed $40 per month. The limits for the second, third and fourth classes are $60, $80 and $100 respectively, and the fifth class is open to those receiving more than $100 per month.

All grades of employés may join, and in fact the president of the company and the most, if not all, of the general officers are members.

A member of the first class contributes 75 cents per month. This entitles him when sick to 40 cents per day, exclusive of the first six days, and to 50 cents per day when disabled by accident in the company's service. Sundays are included. Sick benefit is payable for 52 weeks and two or more periods of sickness, separated by intervals of less than two weeks, are counted together in making up the 52 weeks, the six days' deduction being made but once. The full accident benefit is paid for 52 weeks, if the disablement continue so long, and after that, half rate until recovery. The amount payable on death from any cause, of a member of the first class, is $250. The contributions and benefits of the second class are twice as much as for the first, three times as much for the third, and so on. The highest contribution (for fifth class) is $3.75, the corresponding benefits being $2 per day for sickness, $2.50 per day for accident, and $1,250 for death. The last is the highest amount payable at death for any class. Members may, however, take "additional death benefit" at specified rates, varying according to age. The amount so taken cannot exceed the amount payable at death for the class to which the member belongs. This is illustrated thus: "If a member is in the fourth class, his death bene-

fit is four times $250, or $1,000, and he may take "additional" equal to $250, $500, $750, or $1,000. If he takes $1,000, the total payable at death, including that of his class, is $2,000. The like limit for the fifth class is $2,500, which is the highest amount attainable under the present regulations.

During the first six months any employé in the service before the beginning of operations, was admitted without regard to age or physical condition. Since that time medical examination is required, and no one can enter who is over 45 years of age. Medical men are employed to visit and report on disabled members, and prepare statements from which the amounts payable are determined.

Contributions are not made during disability nor for the remainder of a month not before contributed for, in which recovery occurs. A member who has received sick benefits for 52 weeks, and remains disabled, can draw nothing more from the fund. He may, however, retain his title to the death benefit, by contributing at a specified rate. Should he recover and return to duty, he resumes full contribution and title to benefits, excepting that he cannot draw benefits for sickness occurring before he has been at work four weeks. As a means of relief for those who remain sick after exhausting their title to benefits in the fund, the railroad company has recently announced that certain allowances will be made to such members, during their continued disability. These are to be based on the class in the fund of the individual concerned, and the length and character of his service with the company. They are to be paid entirely by the company, no portion of them coming from the contributions of the employés.

The membership is now about 20,000. There was at first some opposition to the plan, arising apparently from misunderstanding. We understand, however, that this is fast disappearing, as the advantages are shown by the results.

With a single exception, this experiment of the Pennsylvania is the first extensive effort in this country to provide a comprehensive plan of this kind for protecting railway employés against the chief accidents of life by a mutual association. The exception is the Relief Association of the Baltimore and Ohio, which has been successfully operated for some years as a chartered corporation. In this, membership is obligatory for those in hazardous employments, for whom the rate of contribution is higher than for those in non-hazardous positions.

The Pennsylvania has undertaken the unique plan of creating a new general department of its service, for the management of this fund. The facilities afforded by the extensive lines and agencies of the associated companies are fully utilized for this purpose, and the road pays all the operating expenses, so that nothing whatever is paid from the contributions of the employés, but the benefits to which members become entitled. The combination by this company under a single premium of the great variety of risks pertaining to the different employments, and extending this to include accident, sickness and death is a valuable feature, contributing as it does an important element of simplicity, which is very necessary in an institution dealing with all kinds of men. Employés, especially those of the lower grades, who are not prepared to carefully investigate and compare data, not only want to enjoy the benefits conferred by their employer, but it is essential to the fullest confidence and good feeling that they understand the principles on which action is based, and are enabled to see the

reasons why certain things are done in a certain way. Complications, concerning age and degree of hazard becloud this necessary simplicity, and the absence of these conditions promotes it. Of course, this desirable result could not be attained except by some strong party, like a great railroad, taking the risk. And this, it should be remembered, is a thing whose value can be estimated but to a limited degree in dollars and cents. The Pennsylvania in thus assuming all the uncertainties of this extensive undertaking, really does for the men what could otherwise be done only by a much larger fund of money; this, together with the expenditure for administration, makes a substantial benefit which amounts to a real, though small, increase in pay.

Perhaps the most important point of difference between the two plans referred to, is that arising from the entire absence of the obligatory feature in that of the Pennsylvania. To require all employés on entering the service to join the fund, tends to reduce the average age of membership, and consequently the death and sick risks, and therefore the cost arising from those risks. Without the obligatory feature men may fail to avail themselves of the advantages of the plan, from improvidence, general indifference or lack of opportunity, to sufficiently inform themselves, and it is thought by many that these must seriously interfere with success under the "voluntary" arrangement. The superior attractiveness, however, of this feature to the average mind appears to have led the Pennsylvania to its adoption, the organizers trusting that the substantial features of the institution would enable it to win its way with those most interested.

It is as yet too early to determine how satisfactory the financial results are likely to prove. Thus far there has been a gradual gain, and the surplus over liabilities amounts to a very considerable sum. The condition of the fund is to be ascertained at the end of each period of three years, when any deficiency is to be made up by the company, and, if there should be a surplus, it is to be used for a superannuation fund or in some other way for the benefit of contributors.

Experience will doubtless suggest improvements. The information obtained, if properly classified, will give new and valuable data as to the percentages of sickness and accident among railway men, upon which to base estimates for future operations in these schemes. The valuable aid of the medical men connected with an organization like this, in suggesting improvement of sanitary surroundings, is an important auxiliary advantage, and has commended itself in the more extended experience of the Baltimore and Ohio. The association will also be able to point out with more accuracy than has been done heretofore, the direction in which efforts for the improvement of appliances for securing safety should be put forth. The result must be a greater degree of security for health and life, with less suffering and a reduced cost of providing indemnity for that which cannot be prevented.

The progress of this and like experiments will be viewed with considerable interest by social economists generally, as well as by railroad proprietors, as efforts on a large scale to promote the welfare of an important part of the people; and these efforts are an evidence of the existence among railroad "magnates" of a decided interest in the welfare of their men, which can hardly fail to promote increased sympathy between employer and employed.

STATISTICS OF WAGES AND EARNINGS.

It would seem to be an easy thing to collect statistics on this subject. What is simpler than to ask a man how much he receives a day; how many hours he is daily employed; the length of his working year, and his aggregate earnings during that time? In an establishment where only a few men are employed these statistics may easily be obtained and with entire accuracy, assuming, of course, that the employer is ready to give them.

When, however. the effort is made to collect these statistics from an individual or company employing five hundred or a thousand men, the nature of the effort is entirely changed. The employing of so many men signifies an elaborate industry, in which the employés are divided into numerous classes. If only one class were employed, then the effort of collecting the statistics of their wages and earnings would not be very difficult; but in consequence of employing numerous classes, the difficulty is much greater. Another difficulty is that the men are employed irregularly, in consequence of accident, sickness or other cause. In a factory employing five hundred men, for example, those who work regularly during the working year, without any intermission whatever, are perhaps, the exceptions; at all events, the absentees for some days of the working year, form no inconsiderable number. There is another dificulty in all factories of considerable size. The wages vary, even in the same sub-division of employment. There is the full paid wage-earner, and a helper or assistant or apprentice who is paid much less.

If the statistics of the wages and earnings of regular and irregular workmen, and full-paid and less-paid workmen, are mingled, the result must be imperfect. Moreover, such a mingling of the wages and earnings of the above-mentioned classes, has been made in nearly all the statistics that have been gathered by the various bureaus, organizations or departments of government in this country.

Why has this been done? One answer is, because of the difficulty of obtaining wages and earnings with more minuteness. If workmen should be separated into the three divisions above mentioned, and then the wages and earnings of each class in each division should be gathered, the labor of doing this would be very great. Take, for example, a cotton factory. There are at least twelve divisions of labor in the manufacture of a piece of cotton cloth, perhaps a larger number. There are two, if not three, classes of workmen employed in each division. There are the regular and irregular workmen, and

very likely also workmen who do not receive full pay, constituting the three classes. Suppose the three classes exist in each division, there would be in a cotton factory perhaps forty kinds or classes of workmen. If women and children are employed (and they are quite generally), then the classification is much more complicated. Now to find out the daily wage and average earnings of a workman in each class is, as one will readily perceive, no easy matter. But some manufactures are much more elaborate; for example, in steel working, there are over a hundred kinds or classes of working men employed, and while, perhaps, in many of these only full-wage men are employed, there must necessarily be regular and irregular workmen, making more than two hundred classes of workmen, from whom these statistics must be gathered in order to attain any degree of accuracy in such an investigation. This was seen to be so difficult, if seen at all, that statisticians have been quite content to get fewer data and draw their averages and other conclusions from these, whereby, in our judgment, a most serious error has been committed toward all concerned.

In the present investigation a blank was prepared and sent to representative employers in different parts of the State, containing a separation of the three kinds of workmen engaged in each division of employment. The first inquiry related to the specific kind of work in which a workman was engaged; machinist, roller, spinner, weaver, tending a picker, dyer, or other specific kind of work. The next inquiry related simply to the number of full-paid workmen who had worked during the working year. Thus, at the outset the regular workmen employed in a specific kind of work was cut of from those who had worked for a period less than the working year, or for less than full wages. Having singled out the regular workmen thus engaged in a specific kind of work from the others, and ascertained the amount of their daily wage or remuneration for piece work, if they were employed in that manner, we sought to ascertain the average earnings of that class for the year. It will be seen, therefore, that information thus obtained must be accurate and of great worth in future study. The same inquiry was made with respect to the earnings of every other class of regular workmen engaged in a specific kind of work. Then the persons who received less than full pay, who worked regularly during the year, were treated in the same manner and the average earnings of these classes were obtained with accuracy. The persons who worked for a period shorter than the entire working year have been treated in a different manner, and while it was easy enough to divide their aggregate earnings by the total number, and thus find out their average earnings, the remark should be added, that if a workman is dismissed, or goes away before completing a working year, we should remember that he may be employed elsewhere, and, consequently, his entire earnings for the year may be as great or even greater than

the other workmen of the same class in the establishment in which he was formerly employed.

The difficulties above stated in the way of getting correct information on this subject are not all, nor the most formidable. One object of collecting these statistics is to make a comparison of wages paid in different places; and of late years many comparisons have been made between wages paid in this country and in the countries of the old world. As we all know, many comparisons and all kinds of figures have been put before the people in newspapers, magazines and books. Nothing can be more deceptive than these comparisons, not only for the reasons already given, but for the further reason that a workman who is called by the same name everywhere, may do an entirely different kind or quality of work in different places, and therefore his wage is no proper measure of the effort which he has expended to earn his money. An example or two will render this statement perfectly clear. A few years ago the persons employed in straightening railroad rails were skillful workmen and often made $4 or $5 a day. Now, this work is largely done by a machine which a man possessing hardly any skill can manage successfully. These men are, therefore, receiving to-day, wherever such a machine is used, as low wages, perhaps, as any other class of men employed in the establishment. Suppose, in the figures that we might present in this Report, we should give the daily wage and the yearly earnings of such a man in an establishment not having a machine of the kind described. Let us say that he is employed three hundred days a year, and is getting $5 a day, or $1,500 a year. In another table, that we might give, of another establishment having a machine, where the man receives $2 a day and works for the same period of time, the result would show $600 a year. A reader not familiar with the facts here given would at once wonder why the difference should be so great between the earnings of the two men; and yet, in fact, the man who is employed in the establishment having the machine and getting $2 a day, very likely would use no more skill than the man who is getting $2 a day at different work in the other place. In other words, the rates for labor of the same grade may be exactly the same at the places, and yet, in consequence of the different kinds of machinery, or lack of machinery for doing many of the processes, the rates of wages and the annual earnings for performing the processes called by the same name would vary greatly. For this reason, therefore, all statistics relating to the wages of workmen in different places, not taking account of these things, are saturated with fallacy.

Another difficulty is that many of the names of laborers are local, or, if having a wider application, mean different things in different places. For example, there may be a dozen kinds of rollers who are employed in rolling iron If the man is described by the general term "roller," it means little, because the wages of the different kinds of rollers vary.

The same would apply to weavers in a mill; indeed, the higher the degree of skill, the greater is the variation in the rates of wages.

Again, the machinery may be the same in two mills, and yet a higher price be paid for labor in one than the other in order to get a better result from the same material, or an equally good result from poorer material. Thus a company in one of the cities of the State pays a dollar a week more than the others for spinning, because it uses more difficult material, and it is needful to pay this advance to secure hands. Even with this seeming advance, the spinners are inclined to go elsewhere whenever an opportunity is offered. The company, therefore, must pay one dollar a week more to put its employés on the same plane of wages as other spinners receive. In a report without explanation a reader would conclude that the spinners employed by that company were favored, when in truth they are not in the slightest degree.

A very interesting question arises here, which, though a little away from the main subject, is worth considering. The more generally machinery is used, the less skill is required in quantity and quality to manufacture goods. If one man made all the parts of a watch he would require skill of the highest order; but in subdividing the work among a large number, as is done at Elgin and Waltham and other places, very ordinary skill is enough to make almost every part of a watch. In truth, the term skill can hardly be applied to the effort of most of the persons who are engaged in these great factories. Those who bake the enamel on the plates, make the springs and assemble the pieces, possess considerable skill; but nearly all the operatives possess only ordinary ability. Any girl can apply to one of these factories for work; she is appointed to run a machine, and in three or four days or a week becomes as efficient in managing it as though she had been thus engaged for a lifetime. It is said that in the manufacture of a steel rail, with the exception of a few men, all the others employed possess no special skill; indeed, a man who has been employed for a few weeks, or less, will do quite as good work as though he had always been thus employed. The consequences of thus introducing machinery to supply human skill are very striking. The leading question here is: Is this a good thing? A working man would at first be inclined to say no. He would say that by introducing machinery and lessening the amount of skill required his wages are reduced, and consequently he suffers. This answer is correct so far as it goes. But in reply we would say, first, that machinery for reducing the expenditure of physical force all will admit is a desirable economy. Suppose, for example, we should do away with the railroad locomotive and endeavor to carry merchandise on our backs, how much could be transported from New York to Philadelphia in a day? By using steam, by resorting to machinery, physical force is saved for other conquests, and this is a great gain. Suppose the raw and manufac-

tured products in a mill were carried from floor to floor by hand, would not this be a vast expenditure of labor? Certainly the introduction of elevators for this purpose is an enormous saving of muscular force, the wise economy of which no one will question. If we should resort to the original method of carrying everything around on our backs, there would not be men enough in the world to perform the task. If, therefore, this be true with respect to the expenditure of muscular force, does it not also apply to the expenditure of mental force? We think so. The man, for example, who was engaged in straightening rails is not necessarily reduced to a common laborer; he is put to some other use at which he can earn his old wages. The invention and use of such a machine may possibly have the effect of diminishing the wages of the person who formerly did the work; but, in many cases at least, the man possessing the degree of skill required to perform that work is set to do something else, and is not simply continued in his old employment at a reduced rate. Another proof of this assertion is that manufacturers need all of the best skill they can get and complain of a lack in this respect. For several reasons, which need not be given here, the shortening of apprenticeship, the operation of trade-union regulations, and other reasons, the quantity of a high grade of skill is not adequate. The rise and progress of our technical schools attest the truth of this remark.

It must be remembered that of all the beneficial changes that have been wrought in this world the labor-saving machine is one of the greatest; and one of the reasons is that persons possessing a small amount of skill are enabled to find employment. As said before, any girl may go into a watch factory and is set to work, and in three or four days or a week is earning full wages. Perhaps she could never have learned to make a watch unaided and alone. So these great factories all over our land by using machinery are enabled to use the most ordinary grades of labor. Without machinery many of those now employed would not be able to get any employment whatever.

Another effect from using machinery is to place men on the same level, and, therefore, it is much easier to change them from one employment to another. On the other hand, it is much easier to get work when deprived of it at any place. The more the machine does, the less there is left for the workman, and consequently he can more easily run some other machine; whereas the more complicated the mechanism, the more difficult it is for the workman to learn how to manage it, and, therefore, the more difficult it is to get employment in the event of losing his place. Illustrations might be added to any extent in proof of this position, but we think this statement will suffice.

Before going further we may ask, who is to be regarded as the best paid laborer? Shall we not say the man who is paid the highest

wages for the smallest number of hours, with regular employment, and who is expending the least amount of muscular and mental force. Is this not the most nearly correct standard for measuring wages? Let us look at it for a moment. Suppose a man is getting large money wages, but is dipping matches or grinding cutlery by the old-fashioned process, which means certain death in a few years. If human life be worth anything, are not any wages paid for such work very low? Take any kind of employment in which the hazard to life is very great, powder mills and the like, and, considering the hazard, are not the wages paid very low? Consider irregular employment, in which a man may get a large daily wage, and yet be exposed to long periods of idleness during the year. Take the locomotive engineer; even if his earnings be large, yet the strain on his nerves is great, and any reward which he may receive is well earned. Is it not fair to say that a man who may be getting very much less than either of the kinds of workmen just mentioned, but who is employed regularly and who is conserving his mental and physical force, is getting a higher wage in comparison with them?

Beside these considerations another is too important to be omitted. What would the workingman receive if he worked whenever he could have employment? In many cases his annual earnings would have been larger had he chosen to work more days. His unwillingness to do so was from his own volition and not from necessity. The employer was willing, nay, eager to have him work, perhaps, every day in the year; but he chose to do otherwise. As an example the bottle glass blower in Pittsburgh, may be mentioned. Two years ago he concluded to stop for a couple of months in the summer. He notified his employer that on a day mentioned he proposed to absent himself and remain away until the first of September. All of his fellow workmen concluded to do the same thing. In other words, the action thus taken was the result of a mutual conference among them. The glass furnaces were closed, not because the employers desired or wished that they should be, but because the employés determined to cease from their labors for a season. One can readily perceive that if the blowers had worked through the year, their annual earnings would have been much larger than they were. No one questions their right to take a vacation; this is not the point of the present discussion; the fact is mentioned simply to show that they might have earned more money had they desired to do so. The same is true with respect to workingmen in many occupations. They prefer to stop every now and then for a day or longer period; and therefore any tables that may be prepared showing the annual earnings of workingmen, are defective in so far as they are supposed to represent the possibilities of the wage-earner. It is unquestionably true that in nearly all occupations and for almost every year, the workingmen in this country could have earned more wages in the aggregate than they received.

With respect to stopping in consequence of strikes, several things may be said. The workingman would say, of course, that with him the strike was a necessity and his loss of wages could not be helped. The employer, on the other hand, would say that the strike was not a necessity and, therefore, the workingman could have earned more than he did if he had desired. Whenever an increase has occurred it has partly covered the loss incurred during the striking period; but whenever that has been prolonged, extending through several weeks or even months, the increase granted too often has not been sufficient to cover the loss incurred during the period of idleness. Perhaps the increase running through the succeeding years would cover the loss thus incurred, and it might not. So the question then may be regarded as fairly balanced whether the loss occasioned by strikes should be regarded as a real loss in possible earnings, or whether it should not be so regarded or taken into account. Probably it would be quite as near the truth to say that if strikes had not occurred, and the employed had worked regularly as many days as they could, their earnings would been have considerably larger than they were through any increase occasioned by strikes. This conclusion, perhaps, may be questioned by the workingman; but whether he can do so successfully or not, the main proposition above mentioned, that his aggregate earnings would be larger if he had worked whenever his employer was willing to employ him, is unquestionably correct.

Another point also may be mentioned in this connection, admitting that variations in rates and wages exist, even for the same kinds of work and for the exercise of the same kinds of skill in different places, does any real variation exist in wages considering the varying cost of living in different places? In other words, if a spinner in Philadelphia gets higher wages than a spinner in Lancaster, who is working on the same kind of machine and exercising the same degreee of skill, will not the former be obliged to pay higher rent and more for the necessaries of living,—enough more indeed to equalize the difference in wages? To mention this point is enough without elaborating it.

The difficulties, therefore, in the way of preparing tables of wages which shall be useful and not misleading are very great. To do the work well, the utmost care is required and numerous explanations are needful. Without these, all the figures made are worse than useless, and instead of giving knowledge only produce confusion and discontent.

All these considerations, therefore, enter into and complicate the wage problem. It will be seen that a comparison between workmen in different parts of the country must take into view all these varying conditions of employment, in order to be just and intelligent. It is quite time to understand the very complex conditions under which

men are employed; and as soon as they are, the radical imperfections of all the previous comparisons will clearly appear.

How then shall statistics of wages be tabulated and presented? In one part of this Report will be found an interesting table in which the workmen are grouped into four divisions or classes. The first group includes all who receive from five to twelve cents an hour inclusive; the second group includes all who receive from twelve to twenty cents an hour inclusive; the third group all who receive from twenty to thirty-three cents an hour inclusive; and in the fourth group all who receive from thirty-three to sixty-five cents an hour inclusive. This classification is based on the average daily wages received, instead of the kind of work done. The supposition is that all the men who receive the same average daily wage are of nearly the same grade, and therefore, in discussing this subject, their kind of employment is unimportant? What we seek to know is their average daily wage and total earnings during the year. Their different kinds of employment are, indeed, invested with interest, but the primary phases of this question are namely, the daily wage, the average earnings, the quantity of effort, and the degree of skill. These four things are involved in the classification of labor here given. This classification is quite new, and has been suggested by one of the most successful manufacturing companies in the State, and, indeed, in the world. One thing is certain, that it is much easier to tabulate the statistics under such a classification, and greater accuracy, in some regards, is attained. We might add that any other classification seeking to specify the names of the workmen, is erroneous for the purposes of comparison, unless all the conditions above mentioned are kept clearly in sight. We have, however, presented tables prepared in both ways, for study and comparison.

MONTHLY WAGES AND EARNINGS IN AN IRON AND STEEL WORKS FOR 1887.

TIME WORKED, WAGES AND EARNINGS.

January.

Hours.	Days.	Rate per hour.	Earnings per day.	Total earnings.
42,370	4,237	.088*	$0 88	$3,728 56
611,028	61,103	.136	1 36	83,099 81
113,270	11,327	.23 1/3	2 33 1/3	26,429 66
39,973	3,997 1/3	.435	4 35	17,388 25
Total, . 806,641	80,664	.162	$1 62	$130,646 28

*This class is composed entirely of boys.

February.

38,112	3,811 2/10	.088 1/4	$0 88 1/4	$3,362 92
598,063	59,806 3/10	.1383	1 38 1/3	82,712 12
81,337	8,133 7/10	.242	2 42	19,683 55
43,008	4,300 8/10	.441	4 41	18,966 53
Total, . 760,520	76,052	.164	$1 64	$124,725 12

March.

44,491	4,449 1/10	.088	$0 88	$3,915 21
689,645	68,964 5/10	.139	1 39	95,860 65
90,692	9,069 2/10	.240	2 40	21,766 08
48,940	4,894	.431	4 31	21,093 14
Total, . 873,768	87,376 8/10	.163 1/4	$1 63 1/4	$142,635 08

April.

40,370	4,037	.092	$0 92	$3,714 04
599,750	59,975	.142	1 42	85,164 50
142,780	14,278	.240	2 40	34,267 20
53,600	5,360	.467	4 67	25,031 20
Total, . 836,500	83,650	.177	$1 77	$148,176 94

May.

39,150	3,915	.093	$0 93	$3,640 95
616,500	61,650	.141	1 41	87,056 28
149,010	14,901	.237	2 37	35,315 37
51,940	5,194	.460	4 60	23,892 40
Total, . 856,600	85,660	.175	$1 75	$149,905.00

TIME WOKED, WAGES AND EARNINGS—Continued.

June.

Hours.	Days.	Rate per hour.	Earnings per day.	Total earnings.
36,730	3,673	.098	$0 98	$3,599 54
595,850	59,585	.141	1 41	84,014 85
142,970	14,297	.236	2 36	33,740 92
52,390	5,239	.481	4 81	25,199 59
Total, . 827,940	82,794	.177	$1 77	$146,554 90

July.

33,340	3,334	.087	$0 87	$2,900 58
491,480	49,148	.14	1 40	68,807 20
95,120	9,512	.239	2 39	22,733 68
25,890	2,589	.418	4 18	10,828 83
Total, . 645,830	64,583	.163	$1 63	$105,270 29

August.

40,540	4,054	.089	$0 89	$3,608 06
594,960	59,496	.142	1 42	84,434 29
154,330	15,433	.24	2 40	37,039 20
57,150	5,715	.479	4 79	27,374 85
Total, . 846,980	84,698	.18	$1 80	$152,456 40

September.

38,170	3,817	.09	$0 99	$3,435 30
567,090	56,709	.142	1 42	80,526 78
154,820	15,482	.238	2 38	36,847 16
52,310	5,231	.486	4 86	25,422 66
Total, . 812,390	81,239	.18	$1 80	$146,231 90

October.

34,810	3,481	.092	$0 92	$3,202 52
515,570	51,557	.141	1 41	72,523 36
138,290	13,829	.236	2 36	32,636 44
48,650	4,865	.440	4 40	21,406 00
Total, . 737,320	73,732	.176	$1 76	$129,768 32

November.

38,880	3,888	.087	$0 87	$3,382 56
534,800	53,480	.138	1 38	73,802 40
103,370	10,337	.239	1 39	24,705 43
39,740	3,974	.422	4 22	16,770 28
Total, . 716,790	71,679	.165½	$1 65½	$118,660 67

TIME WORKED, WAGES AVD EARNINGS—Continued.

December.

HOURS.	Days.	Rate per hour.	Earnings per day.	Total earnings.
35,330	3,533	.089	$0 89	$3,144 37
524,050	52,405	.137	1 37	71,794 85
103,310	10,331	.240	2 40	24,794 40
39,450	3,945	.409	4 09	16,135 05
Total, . 702,140	70,214	.165	$1 65	$115,868 67

Recapitulation.

MONTHS.	Hours.	Rate per hour.	Hours.	Rate per hour.	Hours.	Rate per hour.	Hours.	Rate per hour.	Earnings.
January, .	42,370	.088	611,030	.136	113,270	.233	39,970	.435	$130,646 28
February, .	38,110	.088	398,070	.138	81,340	.242	43,010	.441	124,725 12
March, . . .	44,490	.088	689,640	.139	90,690	.240	48,940	.431	142,635 08
April, . . .	40,370	.092	599,750	.142	142,780	.240	53,600	.467	148,176 94
May, ...	39,150	.093	616,500	.141	149,010	.237	51,940	.460	149,905 00
June, ...	36,730	.098	595,850	.141	142,970	.236	52,390	.481	146,554 90
July, . . .	33,340	.087	491,480	.140	95,120	.239	25,890	.418	105,270 29
August, . .	40,540	.089	594,960	.142	154,330	.240	57,150	.479	152,456 40
September,	38,170	.09	567,090	.142	154,820	.238	52,310	.486	146,231 90
October, . .	34,810	.092	515,570	.141	138,290	.236	48,650	.440	129,768 32
November,	38,880	.087	534,800	.138	103,370	.239	39,740	.422	118,660 67
December,	35,330	.089	524,050	.137	103,310	.240	39,450	.409	115,168 67
Total, . .	462,290	. . .	6,938,790	. . .	1,469,300	. . .	553,040	. . .	$1,610,899 57

Summary, 1887.

HOURS.	Days.	Rate per hour.	Wages per day.	Total earnings.	Per cent. of wages paid each class.
462,290	46,229	.09	$0 90	$41,634 61	2.6
6,938,790	693,879	.14	1 40	969,797 09	60.2
1,469,300	146,930	.238	2 38	349,959 09	21.7
553,040	55,304	.451	4 51	249,508 78	15.5
9,423,420	942,342	.171	$1 70	$1,610,899 57	. . . . .

The earnings were shared by the different employes, as follows:

First Classification.		Second Classification.		Third Classification.		Fourth Classification.	
Per cent.	Received per day.	Per cent.	Received per day.	Per cent.	Received per day.	Per cent.	Received per day.
3.3	$0 50	40.7	$1 20	17.1	$2 00	16.5	$3 10
0.4	61½	0.8	1 25	10.8	2 03	7.2	3 25
3.8	70	13.9	1 30	7.7	2 10	5.6	3 33
15.2	75	5.6	1 35	6.0	2 15	5.1	3 42
12.1	80	4.5	1 40	4.9	2 20	1.4	3 50
2.2	85	2.6	1 45	5.7	2 25	0.9	3 58
12.1	90	7.7	1 50	1.8	2 30	1.2	3 80
34.1	1 00	3.9	1 55	5.6	2 35	9.4	3 92
6.7	1 05	2.3	1 60	1.6	2 40	2.1	4 01
4.3	1 10	1.5	1 65	4.1	2 45	1.4	4 23
5.6	1 16	1.6	1 70	7.7	2 50	21.2	4 29
		3.3	1 75	1.2	2 55	0.9	4 60
		3.0	1 80	2.2	2 65	1.5	4 70
		4.5	1 85	2.3	2 70	2.3	4 90
		1.6	1 90	1.1	2 75	3.4	5 03
		2.0	1 95	1.3	2 79	5.2	5 35
		0.5	1 97	3.8	2 87	0.8	5 50
				1.7	2 93	3.2	5 80
				3.4	3 00	0.7	5 95
				1.8	3 06	4.2	6 21
				1.5	3 10	2.3	6 42
				2.0	3 20	2.5	6 47
				4.7	3 28		

WAGES IN AN IRON AND STEEL WORKS.

The following statistics have been prepared under the direction of the Bureau by one of the largest and most eminent iron and steel working establishments in the country. The figures have been taken directly from the pay rolls and represent money received by the employés.

Boilers or Puddlers.*

Number employed,	328
Average number of days that he was employed during the year,	261
His wage by the day,	$3 50
His average earnings for the year,	$913 55
Highest aggregate earnings received by three workmen of that class for the year,	2,790 17

* A boiler or puddler is a workman who converts cast, into wrought iron, by subjecting it to intense heat, in a low arched furnace, in which the flame is reflected or reverberated on the bed on which the material to be operated is spread, and which frees it from carbon and other impurities.

*A boiler is paid by the ton at rates made by the amalgamated association and manufacturers. Each boiler pays his own helper as is here explained.

† This is the daily wage of the ordinary puddler after paying his helper. Helper's average daily wage, $2.17; his average earnings for the year, $567.85; highest earnings received by three of them for the year, $1,734.41

Muck-rollers.*

Number of employed,	4
Average number of days such workman was employed during the year,	261
His earnings by the day,	$8 83
These are the earnings of each of the four men after paying help.	
Earnings for the year,	$2,303 73

* A muck-roller is the workman who "rough-rolls," or passes the iron through the first sett of rolls.

* These four rollers pay forty-eight men from $1.58 to $3.86 per turn.

* It is difficult to get exact earnings from workmen of this kind, as they will not tell exactly how much they pay out, but they earn fully this much themselves, if not more.

* These four contractors, or rollers, have about forty men employed, whose average earnings amount to $3.00 per turn.

Muck Weighers, Muck Shearmen and Day Hands About Forge.*

Number employed,	118
Average number of days that such workman was employed during the year,	292
His earnings by the day,	$1 73
Earnings for the year,	506 77

* The most of this class of workmen work six days one week and five days the next.

* The wage in this department varies from $1.35 to $2.00 per day; this average includes overtime.

Scrappers.*

Number employed,	2
Helpers, †	2
Average number of days such workman was employed during the year,	249
His earnings by the day,	$4 11
Helper's wage by the day,	4 11
Earnings for year,	1,024 16

* A scrapper rolls the scrap iron.

† These men put the scrap iron into the converters, and work by the ton.

This furnace was idle a great deal for repairs.

Bloom-furnace Heaters.*

Number employed,	4
Average number of days such workman was employed during the year,	239
His earnings by the day,	$5 08
Earnings for the year,	1,214 39

* The workman who heats the "blooms;" he works by the ton.

* This furnace was idle a great deal for repairs.

Blacksmiths.

Number employed,	26
Helpers,	26
Average number of days that such workman was employed during the year,	264

Blacksmiths—Continued.

His wage by the day,	$2 75
Helper's wage by the day,	1 65
Earnings for the year,	726 00
Helper's earnings for the year,*	435 00
Highest aggregate earnings received by three workmen of this class for the year,	2,534 40
Or earnings per day,	3 20

* On a strike part of year.

Millwrights.*

Number employed,	15
Average number of days that such workman was employed during the year,	310
His wage by the day,	$2 15
Over time days,	73½
Earnings for the year for regular working days,	$666 50
Earnings for overtime,	158 01
Highest aggregate earnings received by three workmen of this class for the year,	3,177 32
Or per day,	2 76

* This class of workmen make a great deal of overtime.

Bolt, Rivet and Spike Makers.*

Number employed,	15
Average number of days that such workman was employed during the year,	309
His earnings by the piece, reduced to daily wage,	$3 70
Earnings for the year,	1,144 36
Highest aggregate earnings received by three workmen of that class for the year,	4,335 87
Or per day,	4 68

* Some workmen of this class are paid by the hundred pounds, or hundreds bolts.

Miscellaneous Workmen in Bolt Department.*

Number employed,	32
Average number of days that such workman was employed during the year,	309
His wage by the day,	$2 22
Earnings for the year,	687 25
Highest aggregate earnings received by three workmen of this class for the year,	2,553 15
Or per day,	2 72

* This includes two or three machinists, packers and laborers.

Boys in the Bolt Department.

Number employed during the working year receiving less than a man's full wages,	30
Average number of days that such boy was employed during the year,	309
His wage by the day,	$0 82
Earnings for the year,	255 97
Highest aggregate earnings received by three boys of this class for the year,	982 04
Or per day,	1 06

Chainmakers.*

Number employed,	38
Average number of days that such workman was employed during the year,	308
His earnings by the piece, average per day,	$2 50
Earnings for the year,	770 00
Highest aggregate earnings received by three workmen of this class for the year,	2,959 88
Or per day,	3 20

* These workmen are paid by the 100 pounds of chain, which makes it difficult to tell their exact wages per day, as they run several days' work together.

Miscellaneous Workmen in Chain Factory.

Number employed,	19
Average number of days that such workman was employed during the year,	308
His wage by the day,	$1 96
Earnings for the year,	603 68
Highest aggregate earnings received by three workmen of this class for the year,	1,971 20
Or per day,	2 13

Furnace Boys*—Chain Factory.

Number employed during the working year receiving less than a man's full wages,	34
Average number of days that such boy was employed during the year,	308
His wage by the day,	$0 60
Earnings for the year,	184 80
Highest aggregate earnings received by three boys of this class for the year,	600 10
Or per day,	65

*Boys who attend the heating furnaces.

Machinists.

Number employed,	127
Average number of days that such workman was employed during the year,	306½
His wage by the day,	$2 70
Earnings for the year,	828 12
Highest aggregate earnings received by three workman of this class for the year,	3,185 40
Or per day,	3 46

Apprentices in Machine Shop.*

Number employed during the working year receiving less than a man's full wages,	7
Average number of days that such apprentice was employed during the year,	306½
His wage by the day,	$0 83⅓
Earnings for the year by the day,	255 00
Earnings for overtime,	69 94
Total earnings for the year,	324 94

* These boys commence at five dollars per week, with one dollar per week increased pay each year for four years, when their apprenticeship is completed.

Machine Shop Laborers.*

Number employed,	17
Average number of days that such workman was employed during the year,	306
His wage by the day,	$1 57
Earnings for the year,	481 95

* These men are elassed as "skilled laborers." A little above common labor.

Moulders in Foundry.

Number employed,	60
Average number of days that such workman was employed during the year,	307
His wage by the day,*	$2 78
Earnings for the year,	853 66
Highest aggregate earnings received by three workmen of this class for the year,	3,555 64
Or per day,	3 86

*This includes overtime.

Apprentices in Foundry.*

Number employed during the working year receiving less than a man's full wages,	15
Average number of days that such boy was employed during the year,	307
His wage by the day,	$0 97
Earnings for the year,	299 39

* These boys eommence at $4.50 per week, and their wages is inereased one dollar per week eaeh year for 3½ years, when their apprenticeship is finished.

Laborers in Foundry.

Number employed,	29
Average number of days that such workman was employed during the year,	307
His wage by the day,	$1 50
Earnings for year,	460 50
Earnings for overtime,	81 60
Total for year,	542 16

Bricklayers.

Number employed,	10
Average number of days that such workman was employed during the year,	309
His wage by the day,	$3 80
Earnings for the year,	1,174 20
Highest aggregate earnings received by three workmen of this class for the year,	4,579 68
Or per day,	4 94

Bricklayer's Helpers.

Number receiving a man's full wages,	11
Number receiving less than a man's full wages,	1
Average number of days such workman was employed during the year,	309
His wage by the day,	$1 76
Earnings for the year,	543 84
Highest aggregate earnings received by three workmen of this class for the year,	2,053 84
Or per day,	2 21

Patternmakers.

Number employed,	11
Average number of days that such workman was employed during the year,	302
His wage by the day,	$2 52
Earnings for the year,	763 78
Highest aggregate earnings received by three workmen of this class for the year,	2,861 92
Or per day,	3 16

Patternmakers' Apprentices.

Number employed during the working year receiving less than a man's full wages,	4
Average number of days that such boy was employed during the year,	302
His wage by the day,	$0 88¾
Earnings for the year,	268 08
Highest aggregate earnings received by three boys of this class for the year,	918 00
Or per day,	1 00

Carpenters.

Number employed,	15
Average number of days that such workman was employed during the year,	301
His wage by the day,	$2 52
Earnings for the year,	758 65
Highest aggregate earnings received by three workmen of this class for the working year,	2,831 14
Or per day,	3 13

Engineers.

Number employed,	24
Average number of days that such workman was employed during the year,	307
His wage by the day, *	$3 16
Earnings for the year,	969 79
Highest aggregate earnings received by three workmen of this class for the year,	3,348 28
Or per day,	3 63

* The wage of this class of workmen averages from $2.60 to $2.85 per day, but overtime and Sunday work brings it up to the rates above mentioned.

Spool-engine Boys.*

Number employed during the working year receiving less than a man's full wages,	13
Average number of days that such boy was employed during the year,	307
His wage by the day,	$1 33
Earnings for the year,	409 41

*These are large boys, almost of men's age, and they run engines attached to the spool or drum that draws heavy piles of iron out of the heating furnaces.

Miscellaneous Workmen.*

Number employed,	283
Average number of days that such workman were employed during the year,	282
His wage by the day,	$1 40
Earnings for the year,	394 80
Highest earnings received by one workman of this class for the year,	483 75
Or per day,	1 71½

* This class includes "dragouts," "pilers," "chargers," "bundlers," "shearmen," at small mills, "extra hook-ups," beam and angle iron straighteners, nail factory tenders, &c. Some of this class work by the ton and others by the day, and it is impossible to separate them.

Pull-up Boys.*

Number employed,	36
Average number of days such boy was employed during the year,	211
His wage by the day,	$0 65
Earnings for the year,	137 15

* These boys are paid by the turn, of so many heats, and they raise and lower the furnace doors for the heater.

Common Laborers in Rolling Mill.*

Number employed,	302
His wage by the day,	$1 35
Earnings for the year,	409 05
Overtime,	33 33
Total,	442 38
Highest aggregate earnings received by three workmen of this class for the year,	1,579 50
Or per day,	1 73

* The regular wages for this class of workmen is $1.35 per day, but all make overtime.

Extra Laborers in Rolling Mill.*

Number employed,	47
Average number of days that such workman was employed during the year,	303
His wage by the day,	$1 69½
Earnings for the year,	513 58
Highest aggregate earnings received by three workmen of this class for the year,	1,820 22
Or per day,	2 00

* A little above common labor.

Stockers.*

Number employed,	37
Average number of days that such workman was employed during the year,	309
His wage by the day,	$1 55
Earnings for the year,	474 55
Overtime,	237 31
Total,	711 86

* These men handle the finished iron and are also called "warehouse-men."

* The regular rate of wages of this class is $1.55 per day, but their overtime averages 75 cents per day.

Teamsters.

Number employed,	6
Average number of days that such workman was employed during the year,	308
His wage by the day,	$1 88
Earnings for the year,	579 04
Highest aggregate earnings of three workmen of this class for the year,	1,835 68
Or per day,	1 97

Watchmen and Furnace Firemen.*

Number employed,	13
Average number of days that such workman was employed during the year,	305
His wage by the day,	$1 96
Earnings for the year,	598 54
Highest aggregate earnings received by four workmen of this class for the year,	2,920 00
Or per day,	2 00

* Four men are regularly employed as policemen at two dollars per day.

Railroad Track-layers.

Number employed,	14
Average number of days that such workman was employed during the year,	301
His wage by the day,	$1 69
Earnings for the year,	510 13

Heaters at 16″ Bar-mill.*

Number employed,	6
Average number of days that such workman was employed during the year,	147
His wage by the day,	$7 33
Earnings for the year,	1,077 51

* A new mill in operation 147 days during the year; workmen paid by the ton.

Finishers and Roughers 16″ Bar-mill.*

Number employed,	5
Average number of days that such workman was employed during the year,	147
His wage by the day,	$3 02
Earnings for the year,	433 94

* A rougher works on the opposite side of the rolls from the roller, and passes the iron back to him after it passes through the rolls.

Roller at 16″ Bar Mill.*

Number employed,	1
Average number of days that such workman was employed during the year,	147
† His wage by the day,	$18 02
Earnings for the year,	2,648 94

* This is a new mill which was in operation only 147 days during the year.
† This is net, after paying all of his help.

Assistant Roller at 16″ Bar Mill.

Number employed,	1
Average number of days that such workman was employed during the year,	147
His wage by the day,	$7 85
Earnings for the year,	1,153 95

Heaters and Helpers at 16″ Bar Mill.

Number employed,	6
Average number of days that such workman was employed during the year,	147
His wage by the day,	$2 77
Earnings for the year,	407 19

Catchers at 16″ Bar Mill.

Number employed,	2
Average number of days that such workman was employed during the year,	147
His wage by the day,	$6 52
Earnings for the year,	958 44

Catcher's Roughers.

Number employed,	4
Average number of days that such workman was employed during the year,	147
His wage by the day,	$3 61
Earnings for the year,	530 67

Pilers, Chargers, Dragdowns, Hook-Ups, Straighteners, Shearman and Helpers.*

Number employed,	10
Average number of days that such workman was employed during the year,	147
His wage by the day,	$3 78
Earnings for the year,	555 66

*The piler piles the muck iron in layers for re-heating; charger puts the ingots in furnace and draws same when heated; dragdown takes pile of iron from heating furnace to rolls; hook-up's use long hooks suspended on pulleys to hold the iron in position while being rolled; straightener straighens the iron when finished during the cooling process; shearmen, shears the iron to the lengths ordered.

Skilled Laborers in Bridge Works.

Number employed,	74
Average number of days that such workman was employed during the year,	308
His wage by the day,	$2 17
Earnings for the year,	667 78
Highest aggregate earnings received by three workmen of this class for the year,	2,935 97
Or per day,	3 17

Laborers in Bridge Works.

Number employed,	39
Average number of days that such workmen was employed during the year,	308
His wage by the day,	$1 45
Earnings for the year,	446 60
Overtime,	36 12
Total,	482 22

Boys in Bridge Works.

Number employed,	7
Average number of days that such boy was employed during the year,	308
His wage by the day,	$0 85
Earnings for the year,	262 82

18″ Mill Rollers.*

Number employed,	1
Average number of days that such workman was employed during the year,	261
His earnings by the day,	$21 86
Earnings for the year,	5,705 30

* This man works by the ton and pays his help, and the above are his own earnings clear, this is considered the best situation in the mill.

Roughers in 18″ Bar Mill.*

Number employed,	8
Average number of days that such workman was employed during the year,	261
His wage by the day,	$4 67
Earnings for the year,	1,219 38

* The above are his absolute earnings, no help to pay.

Catchers at 18″ Bar Mill.

Number employed,	2
Average number of days that such workman was employed during the year,	261
His earnings by the day,	$9 47
Earnings for the year,	2,471 67

* This class work by the ton, and the above are their daily earnings after paying all help.

Catcher's Helper at 18′ Bar Mill.*

Number employed,	4
Average number of days that such workman was employed during the year,	261
His wage by the day,	$4 37
Earnings for the year,	1,140 98

* This workman is paid by the "catcher."

Heaters at 18′ Bar Mill.*

Number employed,	6
Average number of days that such workman was employed during the year,	261
His earnings by the day,	$9 95
Earnings for the year,	2,598 04

* This class of workmen is paid by the ton, and as they have no help to pay, the above earnings absolutely for each of the six.

Heater's Helper at 18″ Bar Mill.

Number employed,	6
Average number of days that such workman was employed during the year,	261
His wage by the day,	$3 84
Earnings for the year,	1,002 10

Piler, Charger, Dragdown. Hookers, Straighteners and Shearmen, 18″ Bar Mill.

Number employed,	32
Average number of days that such workmen was employed during the year,	261
His wage by the day,	$3 63
Earnings for the year,	947 43

Rollers at Small Mills, 8″ and 9″ Trains.*

Number employed,	5
Average number of days that such workman was employed during the year,	230
His earnings by the day,	$11 66
Earnings for the year,	2,681 80
Highest earnings received by one workman of that class for the year,	3,055 33
Or per day,	13 28

* This class of workmen is paid by the ton, and the above are his earnings absolutely after paying all his help.

Assistant Rollers at Small Mills, 8″ and 9″ Trains.*

Number employed,	5
Average number of days that such workman was employed during the year,	230
His earnings by the day,	$5 31
Earnings for the year,	1,221 30
Highest earnings received by one workman of this class for the year,	1,308 12
Or per day,	5 69

* This class of workmen is paid by the roller and they work by the ton.

Heaters at Small Mills, 8″ and 9″ Trains.

Number employed,	10
His earnings by the day,	$6 63
Earnings for the year,	1,524 90
Highest earnings received by one workman of this class for the year,	1,638 00
Or per day,	7 12

* This class of workmen is paid by the ton.

Roughers at Small Mills, 8″ and 9″ Trains.*

Number employed,	20
Average number of days that such workman was employed during the year,	230
Earnings by the day,	$3 31½
Earnings for the year,	762 45
Highest earnings received by one workman of this class for the year,	819 00
Or per day,	3 56

* This class of workmen is paid by the roller and work by the ton.

"Dragdowns" at Small Mills, 8″ and 9′ Trains.

Number employed,	10
Average number of days that such workman was employed during the year,	230

Dragdown—Continued.

His wage by the day,	$2 00
Earnings for the year,	460 00
Highest earnings received by one workman of this class for the year,	477 00
Or per day,	2 07

(Boys) Straighteners, *Scrapers and Poke-in† at Small Mills, 8″ and 9 ′ Trains.

Number employed for less than a man's full wages,	40
Average number of days such workman was employed during the year,	230
His wage by the day,	$1 20
Earnings for the year,	276 00
Highest earnings received by one workman of this class for the year,	285 60
Or per day,	1 24

*Scrapes the scale from nail-plate and hoop iron.

†Puts the iron in the guides at rolls.

Rollers at Small Mill, 10″ Train. *

Number employed,	1
Average number of days that such workman was employed during the year,	270
His earnings by the day,	$12 50
Earnings for the year,	3,375 00

*This is a new mill and worked single turn only, and only for a part of the year. The roller is paid by the ton. A full year would be 306 turns.

Assistant Rollers at Small Mill, 10″ Train.

Number employed,	1
Average number of days that such workman was employed during the year,	270
His earnings by the day,	$9 54
Earnings for the year,	2,575 80

*This man is employed and paid by the roller.

Heaters at Small Mill, 10″ Train.

Number employed,	2
Average number of days that such workman was employed during the year,	270
His earnings by the day,	$5 96
Earnings for the year,	1,609 20

Roughers at Small Mill, 10″ Train.*

Number employed,	3
Average number of days that such workman was employed during the year,	270
His wage by the day,	$2 98
Earnings for the year,	804 60

*This workman is paid by the roller.

(Boys) Scrapers, Poke-in and Straighteners at Small Mill, 10″ Train.

Number employed for less than a man's full wages,	4
Average number of days that such boy was employed during the year,	270
His wage by the day,	$1 20
Earnings for the year,	324 00

Drag-downs at Small Mills 10″ Train.

Number employed,	2
Average number of days that such workman was employed during the year,	270
His wage by the day,	$2 70
Earnings for the year,	629 00

Roller at 12″ Bar Mill.*

Number employed,	1
Average number of days that such workman was employed during the year,	179
His earnings by the day,	$14 95
Earnings for 179 days,	2,676 05

* A new mill, that was in operation part of the year only.

Assistant Roller at 12″ Bar Mill.

Number employed,	1
Average number of days that such workman was employed during the year,	179
His earnings by the day,	$5 81
Earnings for 179 days,	1,039 99

Heaters at No. 12″ Bar Mill.

Number employed.	6
Average number of days that such workman was employed during the year,	179
His wage by the day,	$5 42
Earnings for 179 days,	970 18

Catchers at 12″ Bar Mill.

Number employed,	2
Average number of days that such workman was employed during the year,	179
His wage by the day,	$4 74
Earnings for 179 days,	848 46

"Roughers" at 12″ Bar Mill.

Number employed,	8
Average number of days that such workman was employed during the year,	179
His wage by the day,	$3 19
Earnings for 179 days,	571 01

Pilers and Chargers, Dragdowns, Hook-ups, Straighteners, Helpers and Shearmen.

Number employed,	16
Average number of days that such workman was employed during the year,	179
His wage by the day,	$2 84
Earnings for 179 days,	508 06

***12″ Bar Mill Roller.**

Number employed,	1
Average number of days that such workman was employed during the year,	252
His earnings by the day,	$11 41
Earnings for the year,	2,875 32

*This class of workman is paid by the ton.

Assistant Roller at 12″ Bar Mill.*

Number employed,	1
Average number of days that such workman was employed during the year,	262
His wage by the day,	$4 76
Earnings for the year,	1,199 52

*This workman is paid by the roller.

Heaters at 12″ Bar Mill.

Number employed,	6
Average number of days that such workman was employed during the year,	252
His wage by the day,	$4 44
Earnings for the year,	1,118 88

Catchers at 12″ Bar Mill.

Number employed,	2
Average number of days that such workman was employed during the year,	252
His wage by the day,	$4 78
Earnings for the year,	1,204 56

Roughers at 12″ Bar Mill.

Number employed,	8
Average number of days that such workman was employed during the year,	252
His wage by the day,	$2 62
Earnings for the year,	660 24

Piler, Charger, Dragout, Hook-up, Straightener, Shearman and Helper.

Number employed,	16
Average number of days that such workman was employed during the year,	252
His wage by the day,	$2 33
Earnings for the year,	587 16

Roller at 16″ Bar Mill.

Number employed,	1
Average number of days that such workman was employed during the year,	232
His earnings by the day,	$9 29
Earnings for the year,	2,155 28

*This mill was re-modeled and was in operation part of the year only. The above is the roller's earnings after paying his help; he is paid by the ton.

Assistant Roller at 16″ Bar Mill.*

Number employed,	1
Average number of days that such workman was employed during the year,	232
His earnings by the day,	$5 01
Earnings for the year,	1,162 32

*This workman is paid by the roller.

Roughers and Finishers at 16″ Bar Mill.

Number employed,	5
Average number of days that such workman was employed during the year,	232
His wage by the day,	$2 76
Earnings for the year,	640 32

Catchers at 16″ Bar Mill.

Number employed,	2
Average number of days that such workman was employed during the year,	232
His wage by the day,	$4 16
Earnings for the year,	$956 12

Catchers, "Roughers" at 16″ Bar Mill.*

Number employed,	4
Average number of days that such workman was employed during the year,	232
His wage by the day,	$2 31
Earnings for the year,	$535 92

*This workman is paid by the catcher.

Heaters at 16 ′ Bar Mill.

Number employed,	6
Average number of days that such workman was employed during the year,	232
His wage by the day,	$4 68
Earnings for the year,	1,085 76

Heater-helper, Piler and Charger, Dragdown, Hook-up, Straightener, Shearman and Helper.

Number employed,	8
Average number of days such workman was employed during the year,	232
His wage by the day,	$2 43
Earnings for the year,	563 76

Rollers at Sheet Mill.*

Number employed,	2
Average number of days that such workman was employed during the year,	183
His earnings by the day,	$6 69
Earnings for the year,	1,224 27

* This workman is paid by the ton, but the above is his average daily earnings.

Heaters at Sheet Mill.

Number employed,	2
Average number of days that such workman was employed during the year,	183
His earnings by the day,	$5 08
Earnings for the year,	929 64

Rollers, at Plate Mill.*

Number employed,	2
Average number of days that such workman was employed during the year,	204
His earnings by the day,	$7 35
Earnings for the year,	1,499 40

*This class of workmen is paid by the ton, but the above is his average daily earnings.

Heaters at Plate Mill.

Number employed,	2
Average number of days that such workman was employed during the year,	204
His earnings by the day,	$5 61
Earnings for the year,	1,144 44

Catchers and Roughers, Plate Mill.

Number employed,	4
Average number of days that such workman was employed during the year,	204
His wage by the day,	$2 50
Earnings for the year,	510 00

Nailers.*

Number employed,	21
Average number of days that such workman was employed during the year,	276
His wage by the piece averages per day,	$3 78
Earnings for the year,	1,043 80
Highest aggregate earnings received by three workmen of this class during the year,	3,653 30
Or per day,	4 41

* This class of workmen is paid by the keg.

Nail Feeder (Boys).*

Number employed, receiving less than a mans full wages,	71
Average number of days that such boy was employed during the year,	276
Number receiving a man's full wages,	20
Wages by the piece, average, per day,	$1 12
Earnings for the year,	308 73
Highest aggregate earnings received by three workmen of this class for the year,	1,250 55
Or per day,	1 51

* Boys who feed nail-cutting machines.

Rollers in Nail Mill.*

Number employed,	2
Average number of days such workman was employed during the year,	193
His earnings by the day,	$6 83½
Earnings for the year,	1,319 16

*This class of workmen is paid by the ton.

Catchers in Nail Mill.*

Number employed,	2
Average number of days such workman was employed during the year,	193
His earnings by the day,	$3 41¾
Earnings for the year,	609 58

*This class of workmen is paid by the ton.

Heaters in Nail Mill.*

Number employed,	4
Average number of days that such workman was employed during the year,	193
His earnings by the day,	$4 82
Earnings for the year,	930 13
Highest aggregate earnings received by two workmen of this class for the year,	1,860 26
Or per day,	4 82

*This class of workmen is paid by the ton.

Roughers in Nail Mill.*

Number employed,	2
Average number of days that such workman was employed during the year,	193
His earnings by the day,	$2 00
Earnings for the year,	386 00

This class of workmen is paid by the ton.*

SUMMARY (No foremen are included).

No. of men.	Daily wage.	Earnings for the year.	No. of men.	Daily wage.	Earnings for the year.	No. of men.	Daily wage.	Earnings for the year.	No. of men.	Daily wage.	Earnings for the year.
302	$1 35	$409 05	8	$2 62	$660 24	6	$4 44	$1,118 83	1	$11 41	$2,875 32
283	1 40	394 80	2	2 70	629 00	8	4 67	1,219 38	5	11 66	2,681 80
39	1 45	446 60	127	2 70	328 12	6	4 68	1,085 76	1	12 50	3,375 00
29	1 50	460 50	26	2 75	726 00	12	4 74	848 46	1	14 95	2,676 05
37	1 55	474 55	5	2 76	640 32	1	4 76	1,199 52	1	18 02	2,648 94
17	1 57	481 95	6	2 77	407 19	2	4 78	1,204 56	1	21 86	5,705 30
26	1 65	435 00	60	2 78	853 66	4	4 82	930 13			
14	1 69	510 13	16	2 84	508 06	1	5 01	1,162 32			
47	1 69⅕	513 58	3	2 98	804 60	2	5 08	929 64			
118	1 73	506 77	5	3 02	433 94	4	5 08	1,214 39			
11	1 76	543 84	24	3 16	969 79	5	5 31	1,221 30			
6	1 88	579 04	8	3 19	571 01	6	5 42	970 18			
13	1 97	598 54	20	3 31½	762 45	2	5 61	1,144 44			
19	1 96	603 68	2	3 41¾	609 58	1	5 81	1,039 99			
2	2 00	460 00	328	3 50	913 55	2	5 96	1,609 20			
10	2 00	460 00	4	3 61	530 67	2	6 52	958 44			
15	2 15	666 50	32	3 63	947 43	10	6 63	1,524 90			
74	2 17	667 78	5	3 64	1,118 91	2	6 69	1,224 27			
32	2 22	687 25	15	3 70	1,144 36	2	6 83½	1,319 16			
4	2 31	535 92	10	3 78	555 66	6	7 33	1,077 51			
16	2 33	587 16	21	3 78	1,043 30	2	7 35	1,499 40			
8	2 43	563 76	10	3 80	1,174 20	1	7 85	1,153 95			
4	2 50	510 00	6	3 84	1,002 10	4	8 83	2,303 73			
38	2 50	770 00	4	4 11	1,024 16	1	9 29	2,155 28			
15	2 52	758 65	2	4 16	956 12	2	9 47	2,471 67			
11	2 52	763 78	4	4 37	1,140 98	1	9 54	2,575 80			
						6	9 95	2,598 04			

No. of boys.	Daily wage.	Earnings for the year.
34	$ 60	$184 80
36	65	137 15
30	82	255 97
7	83½	255 00
7	85	262 82
4	88¾	268 08
15	97	299 39
71	1 12	308 73
49	1 20	276 00
4	1 20	324 00
13	1 33	409 41

Wages* and Earnings of Employes in a Steel Mill for the year 1887,

Number.	Occupation or Kind of Workmen.	Average wages per day.	Earnings for the year for each man.	How estimated.
12	Metal wheelers,	$2 47	$606 99	Paid by tonnage.
4	Coke wheelers,	2 24	549 45	do. do.
2	†Hoist boys,	1 76	431 51	do. do.
2	Cupola foreman,	4 47	1,096 04	do. do.
2	Cupola foremen helpers,	2 93	719 18	do. do.
2	Cupola foremen helpers,	2 19	537 95	do. do.
4	Cinder men,	2 19	537 95	do. do.
2	Ferro men,	2 34	575 35	do. do.
2	Vessel foreman,	4 38	1,075 90	do. do.
2	Vessel foreman helpers,	2 93	719 18	do. do.
4	Scrappers,	2 03	497 68	do. do.
4	Vessel cinder men,	2 66	653 02	do. do.
2	Steel pourers,	4 38	1,075 90	do. do.
14	Pit men,	3 54	857 27	do. do.
2	Sanders,	3 54	857 27	do. do.
2	Stopper setters,	3 33	817 00	do. do.
2	First regulators,	2 66	653 02	do. do.
6	Second regulators,	2 03	497 68	do. do.
2	Ladle liners,	3 28	805 49	do. do.
2	Ladle liners' helpers,	2 72	667 40	do. do.
4	Pusher men,	2 34	575 35	do. do.
1	Bottom maker,	3 40	834 25	do. do.
1	Bottom maker helper,	2 77	678 91	do. do.
1	Stopper maker,	2 93	719 18	do. do.
1	Pipe fitter,	2 93	719 18	do. do.
1	Pipe fitter helper,	1 76	431 51	do. do.
2	Rollers,	5 50	1,347 57	do. do.
2	Roughers,	4 12	1,010 68	do. do.
10	Hookers,	3 12	765 67	do. do.
2	Shearman,	4 12	1,010 68	do. do.
8	Shearman helpers,	2 77	679 35	do. do.
2	Shearman buggyman,	2 04	501 16	do. do.
4	Heaters,	5 50	1,347 57	do. do.
2	Bottom makers,	3 40	835 27	do. do.
2	Bottom makers' helpers,	2 27	556 85	do. do.
6	Chargers,	3 07	751 74	do. do.
2	Cover men,	1 70	417 63	do. do.
2	Regulators,	2 07	506 73	do. do.
2	Rack boys,	1 70	417 63	do. do.
2	Heater helpers,	3 40	835 27	do. do.
6	Chargers,	2 77	679 35	do. do.
2	Blowing engineers,	2 75	825 00	By the day.
2	Reversing engineers,	3 25	975 00	do. do.
2	Fan engineers,	2 20	660 00	do. do.
10	Small locomotive engineers,	2 20	572 00	do. do.
106	Laborers,	1 62	486 00	do. do.
3	Millwrights,	3 90	1,170 00	do. do.
20	Boys from 62½ cents to $1.00 per day.			
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*The scale of wages is regulated by the Amalgamated Association of Iron and Steel Workers and Manufacturers.

Number of turns worked during the year, 245.

†Hoist boys work hydraulic elevator. "Cupola foremen" superintend the cupola where the steel is heated. "Ferro men" heat the ferro-manganese. "Vessel foremen" have charge of the converters where iron is converted into steel. "Vessel cinder men" take slag away from the converters after the heat is poured. "Pit men" remove moulds from ingots, and remove ingots from pit. "Sanders" put sand on top of ingots after pouring. "Stopper setters" sets stoppers in pouring ladle. "First Regulators" work hydraulic cranes. "Second Regulators" work hydraulic cranes. "Ladle liners" line pouring ladle with fire clay and loam. "Pusher men" works hydraulic ram to push ingots out of moulds that stick. "Bottom makers," men who re-line the bottom of converters. "Chargers" charge ingots in furnace and draws same when heated. "Cover men" remove door from furnace for convenience of charger. "Rack boys" work small hydraulic cranes.

WAGES AND EARNINGS IN ANOTHER STEEL AND IRON WORKS.

These works are located in another part of the State. In preparing these statistics the aggregate earnings are taken from the pay rolls. In dividing the amount by the number of men the fractions are omitted; this will account for any seeming error in the daily rate of wages. All except day laborers are paid by the ton, and their remuneration has been reduced to a daily wage, omitting fractions.

RAIL MILL DEPARTMENT.

Stockers.*

Number employed,	10
Average number of days that such workman was employed during the year,	237
His wage by the day,	$1 71
His earnings for the year,	405 42

* Workmen in this department are paid by the ton.

Heaters.

Number employed,	20
Average number of days that such workman was employed during the year,	237
His wage by the day,	$4 22
His earnings for the year,	998 48

Extra Helpers.

Number employed,	20
Average number of days that such workman was employed during the year,	237
His wage by the day,	$2 40
His earnings for the year,	568 84

Sawyer.

Number employed,	1
Number of days that such workman was employed during the year,	237
His earnings for the year,	$1,082 55
One assistant at a daily pay of,	2 25
His earnings for the year,	643 25

Buggymen.

Number employed,	8
Average number of days that such workman was employed during the year,	237
His wage by the day,	$2 38
His earnings for the year,	564 62

Roughers.

Number employed,	4
Average number of days that such workman was employed during the year,	237
His wage by the day,	$3 44
His earnings for the year,	815 70

Hookers and Catchers.

Number employed,	12
Average number of days that such workman was employed during the year,	237
His wage by the day,	$3 24
His earnings for the year,	777 53

Cold Straighteners.

Number employed,	8
Average number of days that such workman was employed during the year,	237
His wage by the day,	$3 95
His earnings for the year,	927 33

Gaggers.

Number employed,	8
Average number of days that such workman was employed during the year,	237
His wage by the day,	$2 29
His earnings for the year,	543 23

Hot Straighteners.

Number employed,	10
Average number of days that such workman was employed during the year,	237
His wage by the day,	$2 15
His earnings for the year,	510 30

Lever Men.

Number employed,	2
Average number of days that such workman was employed during the year,	237
His wage by the day,	$2 15
His earnings for the year,	511 26

Rail-markers.

Number employed,	2
Average number of days that such workman was employed during the year,	237
His wage by the day,	$2 88
His earnings for the year,	682 86

Assistant Rail-markers.

Number employed,	2
Average number of days that such workman was employed during the year,	244
His wage by the day,	$1 20
His earnings for the year,	292 89

Chippers.

Number employed,	6
Average number of days that such workman was employed during the year,	237
His wage by the day,	$2 25
His earnings for the year,	532 69

*Telegraphers.

Number employed,	12
Average number of days that such workman was employed during the year,	240
His wage by the day,	$1 20
His earnings for the year,	290 00

*Men who run the rails to and from the straightening presses.

Rail Run-outs and Pull-ups.

Number employed,	18
Average number of days that such workman was employed during the year,	240
His wage by the day,	$1 20
His earnings for the year,	288 44

Rail Run-outs,

Number employed,	20
Average number of days that such workman was employed during the year,	244
His wage by the day,	$1 14
His earnings for the year,	280 00

Greasers.

Number employed,	2
Average number of days that such workman was employed during the year,	279
His wage by the day,	$1 50
His earnings for the year,	418 75

Rail End Drag-outs (Boys).

Number employed,	6
Average number of days that such boy was employed during the year,	237
His wage by the day,	$1 05
His earnings for the year,	248 70

Inspectors.

Number employed,	2
Average number of days that such workman was employed during the year,	237
His wage by the day,	$1 93
His earnings for the year,	457 30

Assisting Inspectors (Boys).

Number employed,	2
Average number of days that such boy was employed during the year,	217
His wage by the day,	$0 80
His earnings for the year,	173 02

Rail drillers.*

Number employed,	9
Average number of days that such workman was employed during the year,	237
His wage by the day,	$2 14
His earnings for the year,	507 20

*These men are paid per rail made.

Rail-Catchers for Drillers.

Number employed,	13
Average number of days that such workman was employed during the year,	238
His wage by the day,	$1 52
His earnings for the year,	361 80

Engineers.

Number employed,	2
Average number of days that such workman was employed during the year,	232
His wage by the day,	$1 75
His earnings for the year,	455 50

Engineers.

Number employed,	2
Average number of days that such workman was employed during the year,	272
His wage by the day,	$1 70
His earnings for the year,	462 39

First Class Laborers, Rail Mill.

Number employed,	120
Average number of days that such workman was employed during the year,	302
His wage by the day,	$1 20
His earnings for the year,	362 35

BLOOMING DEPARTMENT.

Heaters.*

Number employed,	3
Average number of days that such workman was employed during the year,	304
His wage by the day,	$4 60
His earnings for the year,	1,399 27

* This class of workmen is paid by the ton and they work three turns in twenty-four hours, one-third on each turn.

Heater's Helpers.

Number employed,	39
Average number of days that such workman was employed during the year,	304
His wage by the day,	$3 53
His earnings for the year,	1,073 48

Chippers.

Number employed,	4
Average number of days that such workman was employed during the year,	304
His wage by the day,	$3 87
His earnings for the year,	1,181 41

Screwsmen.

Number employed,	3
Average number of days that such workman was employed during the year,	304
His wage by the day,	$3 77
His earnings for the year,	1,146 62

Front Tablemen at Rolls.

Number employed,	3
Average number of days that such workman was employed during the year,	304
His wage by the day,	$3 67
His earnings for the year,	1,121 14

Engineers at Rolls.

Number employed,	3
Average number of days that such workman was employed during the year,	304
His wage by the day,	$3 00
His earnings for the year,	910 06

Inspectors.

Number employed,	3
Average number of days that such workman was employed during the year,	304
His wage by the day,	$2 86
His earnings for the year,	869 21

Back Tablemen at Rolls.

Number employed,	3
Average number of days that such workman was employed during the year,	304
His wage by the day,	$2 76
His earnings for the year,	839 70

Shearmen, Hookers, Telegraphers, and Loaders.

Number employed,	18
Average number of days that such workman was employed during the year,	304
His wage by the day,	$2 62
His earnings for the year,	796 63

Pull-arounds.

Number employed,	6
Average number of days that such workman was employed during the year,	304
His wage by the day,	$2 52
His earnings for the year,	766 30

Markers.

Number employed,	3
Average number of days that such workman was employed during the year,	304
His wage by the day,	$2 48
His earnings for the year,	752 76

Water-tenders.

Number employed,	6
Average number of days that such workman was employed during the year,	304
His wage by the day,	$2 70
His earnings for the year,	820 80

Furnace-bottomers,

Number employed,	4
Average number of days that such workman was employed during the year,	355
His wage by the day,	$1 80
His earnings for the year,	639 24

Day-laborers.

Number employed,	18
Number of days that such workman was employed during the year,	324
His wage by the day,	$1 20
His earnings for the year,	382 56

BESSEMER CONVERTING DEPARTMENT.

Metal Wheelers.*

Number employed,	9
Average number of days that such workman was employed during the year,	307
His wage by the day,	$1 92
His earnings for the year,	588 65

*This class work by the ton, three turns in twenty-four hours, one-third on each turn.

Vessel Hands.

Number employed,	6
Average number of days that such workman was employed during the year,	307
His wage by the day,	$4 29
His earnings for the year,	1,318 19

Pitmen.

Number employed,	21
Average number of days that such workman was employed during the year,	307
His wage by the day,	$3 56
His earnings for the year,	$1,094 31

Ladle Hands.

Number employed,	9
Average number of days that such workman was employed during the year,	307
His wage by the day,	$3 55
His earnings for the year,	1,089 96

Metal Wheelers.

Number employed,	33
Average number of days that such workman was employed during the year,	307
His wage by the day,	$3 16
His earnings for the year,	969 75

Metal Cupola Hands.

Number employed,	15
Average number of days that such workman was employed during the year,	307
His wage by the day,	$3 46
His earnings by the year,	1,045 64

Trough Hands.

Number employed,	9
Average number of days that such workman was employed during the year,	307
His wage by the day,	$3 11
His earnings for the year,	955 64

Spiegel Cupola Hands.

Number employed,	9
Average number of days that such workman was employed during the year,	307
His wage by the day,	$2 92
His earnings for the year,	896 67

Coke Fillers.

Number employed,	6
Average number of days that such workman was employed during the year,	307
His wage by the day,	$2 06
His earnings for the year,	634 24

Hoist-men.

Number employed,	3
Average number of days that such workman was employed during the year,	307
His wage by the day,	$2 11
His earnings for the year,	649 69

Cupola Hands.

Number employed,	3
Average number of days that such workman was employed during the year,	307
His wage by the day,	$1 89
His earnings for the year,	581 29

Cindermen.

Number employed,	15
Average number of days that such workman was employed during the year,	307
His wage by the day,	$3 13
His earnings for the year,	961 96

Pulpit Hands.

Number employed,	6
Average number of days that such workman was employed during the year,	307
His wage by the day,	$2 50
His earnings for the year,	766 93

Blowers.*

Number employed,	2
Average number of days that such workman was employed during the year,	307
His wage by the day,	$4 42
His earnings for the year,	1,357 37

*This class work two turns per day, one-half one on each turn.

Stock Weighmen.

Number employed,	2
Average number of days that such workman was employed during the year,	307
His wage by the day,	$3 95
His earnings for the year,	1,212 32

Bottom-makers No. 1.

Number employed,	2
Average number of days that such workman was employed during the year,	307
His wage by the day,	$3 41
His earnings for the year,	1,046 28

Bottom-makers No. 2.

Number employed,	2
Average number of days that such workman was employed during the year,	307
His wage by the day,	$1 97
His earnings for the year,	606 16

Cupola Repairmen.

Number employed,	8
Average number of days that such workman was employed during the year,	307
His wage by the day,	$2 71
His earnings for the year,	832 80

Stopper-maker.

Number employed,	1
Average number of days that such workman was employed during the year,	307
His wage by the day,	$3 02
His earnings for the year,	928 50

Cupola Cindermen.

Number employed,	8
Average number of days that such workman was employed during the year,	307
His wage by the day,	$1 70
His earnings for the year,	520 78

Metal Gang.

Number employed,	6
Average number of days that such workman was employed during the year,	307
His wage by the day,	$1 92
His earnings for the year,	588 41

Engineers.

Number employed,	2
Average number of days that such workman was employed during the year,	307
His wage by the day,	$2 95
His earnings for the year,	906 30

Assistant Engineers.

Number employed,	4
Average number of days that such workman was employed during the year,	307
His wage by the day,	$1 49
His earnings for the year,	456 48

Water-tenders.

Number employed,	6
Average number of days that such workman was employed during the year,	307
His wage by the day,	$2 70
His earnings for the year,	828 25

Laborers.

Number employed,	43
Average number of days that such workman was employed during the year,	325
His wage by the day,	$1 20
His earnings for the year,	389 30

Ganister Mixers.

Number employed,	8
Average number of days that such workman was employed during the year,	307
His wage by the day, one receives,	$2 50
Two,	1 50
Three,	1 25
Two,	1 00
Their aggregate earnings for the year,	3,472 34

Second-class Laborers.

Number employed,	14
Average number of days that such workman was employed during the year,	324
His wage by the day,	$1 00
His earnings for the year,	324 00

SUMMARY—(No foremen are included).

Number of men.	Daily wages.	Earnings for the year.	Number of men.	Daily wages.	Earnings for the year.	Number of men.	Daily wages.	Earnings for the year.
2	$1 00	$307 00	6	$2 06	$634 24	9	$3 11	$955 64
14	1 00	324 00	3	2 11	649 69	15	3 13	961 96
20	1 14	280 00	9	2 14	507 20	33	3 16	969 75
2	1 20	292 89	2	2 15	511 26	12	3 24	777 53
12	1 20	290 00	10	2 15	510 30	15	3 40	1,045 64
120	1 20	362 35	6	2 25	532 69	2	3 41	1,046 28
18	1 20	288 44	1	2 35	643 25	4	3 44	815 70
18	1 20	382 56	8	2 29	543 23	39	3 53	1,073 48
43	1 20	389 30	8	2 38	564 62	9	3 55	1,089 96
3	1 25	383 75	20	2 40	568 84	21	3 56	1,094 31
4	1 49	456 48	3	2 48	752 76	3	3 67	1,121 14
2	1 50	418 75	6	2 50	766 93	3	3 77	1,146 62
13	1 52	361 80	1	2 50	767 50	4	3 87	1,181 41
8	1 70	520 78	6	2 52	766 30	8	3 95	927 33
2	1 70	462 39	18	2 62	796 63	2	3 95	1,212 32
10	1 71	405 42	6	2 70	820 80	20	4 22	998 84
2	1 75	455 50	8	2 71	832 80	2	4 42	1,357 37
4	1 80	639 24	3	2 76	839 70	3	4 60	1,399 27
3	1 89	581 29	3	2 86	869 21			
6	1 92	588 41	9	2 92	896 67	*Boys.*		
9	1 92	588 65	2	2 95	906 30	2	80	173 02
2	1 93	457 30	3	3 00	910 06	6	1 05	248 70
2	1 97	606 16	1	3 02	928 50			

WAGES IN A SPECIAL IRON INDUSTRY, PHILADELPHIA.

Stationery Engineers.

Number receiving full wage,	13
Average number of days that they were employed during the year,	304½
Average daily wage of full-wage workman,	$2 00
His earnings for the year,	609 00
Average overtime, 645 hours, 20 cents per hour,	129 00
His total earnings for the year,	738 00
Highest earnings received by three workmen of this class for the year,	2,378 17
Number of workmen employed receiving less than full wage,	6
Their total earnings,	$3,217 48

Stationary Engineer Firemen.

Number receiving full wage,	2
Average number of days that they were employed during the year,	304½
Average daily wage of full-wage workman,	$1 60
His earnings for the year;	487 20
Average overtime, 97 hours, 16 cents per hour,	15 52
His total earnings for the year,	502 72
Highest earnings received by two workmen of this class for the year,	1,058 85
Aggregate earnings of those employed receiving less than a man's full wage,	942 74

Night Watchmen.

Number receiving full wage,	15
Number of days that they were employed during the year,	365
Average daily wage of full-wage workman,	$1 80
His earnings for the year,	653 40
Highest earnings received by three workmen of this class for the year,	2,209 22

Carters.

Number receiving full wage,	30
Average number of days that they were employed during the year,	304½
Average daily wage for full-wage workman,	$1 60
His earnings for the year,	487 20
Average overtime, 147½ hours, 16 cents per hour,	23 60
His total earnings for the year,	510 80
Highest earnings received by three workmen of this class for the year,	1,788 66
Aggregate earnings of those employed receiving less than a man's full wage,	1,798 65

Machinists.

Number receiving full wage,	32
Average number of days that they were employed during the year,	304½

Average daily wage of full-wage workman,	$2 10
His earnings for the year,	639 45
Average overtime, 176 hours, 21 cents per hour,	36 96
His total earnings for the year,	676 41
Highest earnings received by three workmen of this class for the year,	2,639 88
Aggregate earnings of those employed receiving less than a man's full wage,	20,511 12

Carpenters.

Number receiving full wage,	13
Average number of days that they were employed during the year,	304½
Average daily wage of full-wage workman,	$2 30
His earnings for the year,	700 35
Average overtime, 311 hours, 23 cents per hour,	71 53
His total earnings for the year,	771 88
Highest earnings received by three workmen of this class for the year,	2,872 82
Aggregate earnings of those employed receiving less than a man's full wage,	4,284 23

Patternmakers.

Number receiving full wages,	7
Average number of days that they were employed during the year,	304½
Average daily wage of full-wage workman,	$2 50
His earnings for the year,	761 25
Average overtime, 84½ hours, 25 cents per hour,	21 13
His total earnings for the year,	782 38
Highest earnings received by three workmen of this class for the year,	2,480 18
Aggregate earnings of those employed receiving less than a man's full wage, six in number,	4,393 76

Day Watchman.

Number receiving full wage,	1
Average number of days employed during the year,	304½
His daily wage,	$1 40
Overtime, 107 hours, 14 cents per hour,	14 98
His total earnings for the year,	441 28
Number of workmen employed receiving less than full wage,	5
Their total earnings	$1,965 17

Laborers.

Number receiving full wage,	193
Average number of days that they were employed during the year,	304½
Average daily wage of full-wage workman,	$1 30
His earnings for the year,	395 85
Average overtime, 272 hours, 13 cents per hour,	35 36
His total earnings for the year,	431 21
Highest earnings received by three workmen of this class for the year,	1,501 78

Laborers—Continued.

Number of workmen employed receiving less than full wage,	3
Their total earnings,	$1,156 22

Plumbers and Gasfitters.

Number receiving full wages,	1
Number of days employed during the year,	304½
Daily wage,	$2 00
His earnings,	609 00
Overtime, 36½ days, $2.00 per day,	73 00
His total earnings for the year,	682 00
Number of workmen employed receiving less than a man's full wages,	1
His total earnings,	$588 60

Boilermakers.

Number receiving full wage,	3
Average number of days that they were employed during the year,	304½
Average daily wage of full-wage workman,	$2 50
His earnings for the year,	761 25
Average overtime, 433½ hours, 25 cents per hour,	108 38
His total earnings for the year,	869 63
Highest earnings received by three workmen of this class for the year,	3,170 53
Number of workmen employed receiving less than a man's full wage,	2
Their total earnings,	$1,383 83

Blacksmith Helpers.

Number receiving full wage,	39
Average number of days that they were employed during the year,	304½
Average daily wage of full-wage workman,	$1 50
His earnings for the year,	456 75
Average overtime, 400 hours, 15 cents per hour,	60 00
His total earnings for the year,	516 75
Highest earnings received by three workmen of this class for the year,	1,854 23
Number of workmen employed receiving less than full wage,	3
Their total earnings,	1,331 50

Blacksmiths.

Number receiving full wage,	9
Average number of days that they were employed during the year,	304½
Average daily earnings of full-wage workman,	$2 20
His earnings for the year,	669 90
Average overtime, 122 hours, 22 cents per hour,	26 84
His total earnings for the year,	696 74
Highest earnings received by three workmen of this class for the year,	2,322 36
Number of workmen employed receiving less than a man's full wage,	6
Their total earnings,	3,485 28

Machinist Helpers.

Number receiving full wage,	93
Average number of days that they were employed during the year,	304½
Average daily wage of full-wage workmen,	$1 50
His earnings for the year,	456 75
Average overtime, 205 hours, 15 cents per hour,	30 75
His total earnings for the year,	487 50
Highest earnings received by five workmen of this class for the year,	3,305 33
Number of workmen employed receiving less than a man's full wage,	61
Their total earnings,	28,907 79

Drillers.

Number receiving full wage,	3
Average number of days that they were employed during the year,	304½
Average daily earnings of full-wage workman,	$1 50
His earnings for the year,	456 75
Average overtime, 203 hours, 15 cents per hour,	30 45
His total earnings for the year,	487 20
Highest earnings received by three workmen of this class for the year,	1,723 18
Number of workmen employed receiving less than a man's full wage,	3
Their total earnings,	1,297 15

Boys.

Number receiving full boys' wage,	17
Average number of days that they were employed during the year,	304½
Average daily earnings of a boy,	$0 60
His earnings for the year,	182 70
Average overtime, 91 hours, 6 cents per hour,	5 46
His total earnings for the year,	188 16
Highest earnings received by three boys of this class for the year,	634 37
Number of boys employed receiving less than a boy's wage,	11
Their total earnings,	1,680 31

Apprentices.

Number receiving apprentices' full wage,	23
Average number of days that they were employed during the year,	304½
Average daily earnings of full-paid apprentice,	$1 00
His yearly earnings,	304 50
Average overtime, 478 hours, 10 cents per hour,	47 80
His total earnings for the year,	352 30
Highest earnings received by three apprentices of this class for the year,	1,417 53
Number of apprentices employed receiving less than apprentices' full wage,	20
Their total earnings,	3,909 32

WAGES AND EARNINGS IN AN IRON WORKS.

Laborers in Rolling Mill Department.

Number of workmen receiving a man's full wage, ... 35
Average daily wage, ... $1 51½
Average number of days employed during the year, . . . 285
Entire earnings for the year of this class, thirty-five men, $15,107 17
Highest earnings of three workmen were respectively $498 75, $509 60, $570 00.
Number of such workmen employed for less than the working year, ... 34
Daily wage, ... $1 72
Aggregate of earnings of this class for year, ... 7,000 48

Laborers in Forge Department.*

Number of workmen receiving a man's full wage, ... 25
Average daily wage, ... $1 76
Average number of days employed during the year, . . . 248
Entire earnings for the year of this class. twenty-five men, 10,897 02
Highest earnings of three workmen, were respectively, $1,040 00, $446 00, $347 20.

*About forty-five days were lost through strikes in this department.

Laborers in Puddling Department.

Number of workmen receiving a man's full wage, ... 5
Average number of days employed during the year, . . . 288
Average daily wage, ... $1 99
Entire earnings for the year of this class, five men, ... 2,582 91
Highest earnings received by two workmen, were respectively, ... $1,054 00, $504 00

Laborers at Bar Shears.

Number of workmen receiving a man's full wage, ... 10
Average number of days employed during the year, . . . 288
Average daily wage, ... $1 72½
Entire earnings for the year of this class, ten men, ... 5,744 83
Highest earnings received by three workmen, were respectively, ... $648 00, $496 80, $625 00

Bar Mill Laborers.

Number of workmen receiving a man's full wage, ... 10
Average number of days employed during the year, . . . 226
Average daily wage, ... $1 40
Entire earnings for the year of this class, ten men, . . . 3,930 14
Highest earnings received by two workmen were respectively, $350 00, $226 00.

Laborers in Finishing Department.

Number of workmen receiving a man's full wages, ... 48
Average number of days employed during the year, . . . 276
Average daily wage, ... $2 16
Entire earnings for the year of this class, forty-eight men, 28,677 72
Highest earnings received by four workmen of this class respectively, ... $1,054 00, $900 00, $386 40, $635 00

Trimmers in Finishing Department.

Number of workmen receiving a man's full wage, ... 4
Average number of days employed during the year, . . . 276
Average daily wage, ... $2 27
Entire earnings for the year of this class, four men, . . . 2,507 84
Highest earnings received by four workmen of this class respectively, ... $721 46, $596 16, $583 48, $606 74

Mix-in, Finishing Department.

Number of workmen receiving a man's full wage, ... 4
Average number of days employed during the year, . . . 276
Average daily wage, ... $2 07
Entire earnings for the year of this class, four men, . . . 2,289 88
Highest earnings received by four workmen of this class respectively, ... $614 10, $598 46, $537 28, $540 04

Lay-over Boys, Finishing Department.

Number receiving a boy's full wage, ... 12
Average number of days employed during the year, . . . 276
Average daily wage, ... $1 45
Entire earnings for the year of this class, twelve boys, . . 4,823 60
Highest earnings received by three boys, were respectively, ... $447 58, $437 00, $370 30

Catchers or Tablemen, Finishing Department.

Number receiving a man's full wage, ... 14
Average number of days employed during the year, . . . 276
Average daily wage, ... $2 47
Entire earnings for the year of this class, ... 9,553 20
Highest earnings received by three workmen of this class respectively, ... $758 08, $721 24, $585 12

Hammer Drivers, Finishing Department.

Number receiving a man's full wage. 6
Average number of days employed during the year, . . . 276
Average daily wage, ... $2 75
Entire earnings for the year of this class, six men, . . . 4,557 14
Highest earnings received by three workmen of this class were respectively, ... $851 00, $812 82, $857 34

Heaters, Finishing Department.

Number receiving a man's full wage, ... 6
Average number of days employed during the year, . . . 276
Average daily wage, ... $4 32
Entire earnings of this class for the year, six men, ... 7,149 72
Highest earnings received by three workmen respectively, $1,242 91 $1,278 68, $1,196 00.

Knobblers.

Number employed receiving full wage, twenty, each of whom employs two helpers.
Average number of days employed during the year, . . . 220
Average daily wage, including two helpers, pay about $1.80 each, ... $6 16
Entire earnings of this class for the year, twenty knobblers and forty helpers, ... 27,099 71
Highest earnings received by two workmen respectively, $1,550 and $1,675; out of which they pay helpers as above stated.

Shinglers, Knobbling Department.

Number receiving a man's full wage, ... 4
Average number of days employed during the year, . . . 220
Average daily wage, ... $4 19
Entire earnings for the year of this class, four men, . . . 3,776 16
Highest earnings received by one workman, ... 944 00

Refiners, Forge Department.

Number receiving a man's full wage, ... 2
Average number of days employed during the year, . . . 240
Average daily wage, $13.29; out of which, each pays two helpers.
Entire earnings for the year, including helpers' pay, . . . $6,378 55

Rollers, Sheet Mill.

Number receiving a man's full wage, ... 18
Average number of days employed during year, ... 240
Average daily wage, ... $6 31
Entire earnings for the year, of eighteen men, ... 27,248 90
Highest earnings received by three workmen were respectively, ... $2,173 26, $2,091 76, $1,850 19

Heaters, Sheet Mill Department.

Number receiving a man's full wage, ... 18
Average number of days employed during year, ... 240
Average daily wage, ... $4 76
Entire earnings of this class for the year, eighteen men, . 20,569 71
Highest earnings received by five workmen, were respectively, . . $1,577 58, $1,626 40, $1,472 98, $1,284 29, $1,060 85

Spannermen, Sheet Mill Department.

Number receiving a man's full wage, ... 18
Average number of days employed during the year, . . . 240
Average daily wage, ... $3 98
Entire earnings of this class for the year, eighteen men, . 17,226 96
Highest earnings received by three workmen were respectively, ... $1,389 92, $1,211 81, $959 08, $876 61

Catchers, Sheet Mill Department.

Number receiving a man's full wage, ... 18
Average number of days employed during year, ... 240
Average daily wage, ... $3 54
Entire earnings for the year of this class, eighteen men, . 15,297 78
Highest earnings received by four workmen were respectively, ... $1,190 62, $1,092 68, $809 48, $715 20

Trimmers, Sheet Mill Department.

Number receiving a man's full wage, four trimmers and six helpers, ... 10
Average number of days employed during the year, . . . 288
Average daily wage, $5.63; out of which they pay helper.
Entire earnings for the year of this class, ten men, . . . 6,494 39
Highest earnings received by two workmen respectively, $3,085.23, paying three helpers; $1,136.72, paying one helper.

Bundlers, Sheet Mill Department.

Number receiving a man's full wage,	3
Average number of days employed during the year,	288
Entire earnings for the year of this class, three men,	$2,077 50

Matchers, Sheet Mill Department.

Number receiving a man's full wage,	2
Average number of days employed during the year,	288

Entire earnings for the year of this class, two men, $1.700; out of which one helper is paid.

Hook-ups (Bar Mill).

Number employed receiving a man's full wage,	4
Average number of days employed during the year,	248
Average daily wage,	$3 04
Entire earnings for the year of this class, four men,	3,016 93
Highest earning received by one workman,	754 24

Drag-outs, Bar Mill.

Number employed receiving a man's full wage,	4
Average number of days employed during the year,	248
Average daily wage,	$3 65
Entire earnings for the year of this class, four men,	3,620 31
Highest yearly earnings received by one workman,	905 08

Catchers, Bar Mill.

Number employed receiving a man's full wage,	4
Average number of days employed during the year,	248
Average daily wage,	$4 47
Entire earnings for the year of this class, four men,	4,434 79
Highest earnings received by one workman during the year,	1,108 69

Rollers, Bar Mill.

Number employed receiving a man's full wage, four rollers and four helpers,	8
Average number of days employed during the year,	248
Average wage by the day (out of which one helper is paid),	$7 05
Entire earnings for the year of this class, four rollers and four helpers,	$6,993 39
Highest earnings received by one workman (including pay of one helper),	1,748 25

Heaters, Bar Mill Department.

Number employed received a man's full wage.	4
Average number of days employed during the year,	248
Average daily wage,	$4 60
Entire earnings of nine men for the year,	$10,273 67
Individual earnings, average,	1,150 00

Heaters' Helpers, Bar Mill.

Number employed receiving a man's full wage,	9
Average number of days employed during the year,	248
Average daily wage,	$2 0
Entire earnings for the year of this class, nine men,	$4,600 16
Individual earnings of this class, average,	511 13

Puddlers or Boilers.

Number employed receiving a man's full wage,	20
Average number of days employed during the year,	240
Average daily wage (out of which helper is paid),	$5 60
Entire earnings for the year of twenty puddlers with twenty helpers,	26,882 24
Average earnings received by this class twenty men (helper paid out of this),	$1,350 00

Stockers, Puddling Department.

Number employed receiving a man's full wage,	3
Average number of days employed during the year,	240
Average daily wage,	$2 21
Entire earnings for the year, three men,	1,600 96
Average earnings,	$533 65⅓

Engineers.

Number employed receiving a man's full wage,	7
Number of days employed during the year,	360
Average daily wage,	$2 57
Entire earnings of this class for the year, seven men,	$6.509 57
Highest earnings received by three workmen of this class respectively,	$1,092 00, $985 32, $899 64

Machinists.

Number employed receiving a man's full wage,	11
Average number of days employed during the year,	343
Average daily wage,	$2 23½
Entire earnings of this class, eleven men,	$8,434 02
Highest earnings received by three workmen of this class during the year, were respectively	$1,070 00, $850 00, $810 90

Blacksmiths.

Number employed receiving a man's full wage,	4
Average number of days employed during the year,	312
Average daily earnings,	$2 21
Earnings for the year,	2,746 11
Highest earnings received by three workmen, were respectively,	$760 00, $688 50, $688 50

Strikers.

Number employed receiving a man's full wage,	3
Average number of days employed,	308
Average daily earnings,	$1 58
Entire earnings for the year of this class, three men,	1,458 62
Highest earnings received by one workman of this class,	486 20

Washhouse Labor, Cleaning Iron.

Number employed receiving a man's full wage,	1
Average number of days employed during the year,	190
Average daily wage,	$1 80
Entire earnings for the year,	342 28

This department only works when there are orders for cleaned iron.

Firemen, Engineers' Helpers.

Number employed receiving a man's full wage,	2
Average number of days employed during the year,	314
Average daily wage,	$1 68
Entire earnings for the year,	1,054 27
Highest yearly earnings received by two men of this class, were respectively,	$558 50, $495 77

Stocker, Delivers Coke to Sheet Mill Furnace.

Number of men employed,	1
Number of days employed during year,	336½
Daily wage,	$1 62
Yearly earnings,	545 16

Boys, in Sheet Mill Department.

Number employed receiving less than a man's wage,	12
Average number of days employed during the year,	304
Average daily wage,	$1 05
Entire earnings for the year of twelve boys,	$3,827 60
Highest earnings received by two boys of this class for the year, were respectively,	$304 00, $273 60

Boys, Laboring at Sheet Mill.

Number employed receiving less than a man's full wage,	4
Average number of days employed,	241
Average daily earnings,	$1 26
Earnings for the year,	1,515 61
Highest earnings received by two boys, were respectively,	$354 27, $260 28

Laborers in Finishing Department.

Number employed receiving less than a man's full wage (boys),	53
Average number of days employed during the year,	276
Average daily wage,	$1 05
Entire earnings for the year of fifty-three boys,	$13,800 45
Highest earnings received by three of the boys, were respectively,	$289 80, $370 00, $303 60

Packers, Finishing Department.

Number employed receiving a man's full wage (two packers and four helpers),	6
Average number of days employed during the year,	276
Average daily wages for packers, $6.66, out of which each packer pays his two helpers an average of $1.67 per day.	
Entire earnings for the year of this class, six men,	$3,674 97
Highest yearly earnings received by one packer,	910 80
Highest yearly earnings received by one helper,	460 92

Carpenters.

Number employed receiving man's full wage,	3
Average number of days employed during the year,	290
Average daily wage,	$2 13
Entire earnings for the year,	1,852 43
Highest earnings received during the year by two workmen of this class, were respectively,	$780 00, $590 00
Number of workmen employed for less than the full year,	1
Daily wage,	$2 25
Aggregate earnings,	135 00

Bricklayers and Helpers.

Number employed receiving a man's full wage,	4
Average number of days employed during the year,	280
Average daily wage,	$2 80
Entire earnings for the year,	3,859 20
Highest yearly earnings received by three workmen of this class, were respectively,	$1,428 00, $1,050 00, $432 60

Watchmen.

Number employed receiving a man's full wage,	5
Average number of days employed during the year,	344
Average daily wage,	$1 48
Entire earnings for the year,	3,028 09
Highest yearly earnings received by two workmen of this class, were respectively,	$655 20, $509 60

Extras, who take the place of absent Sheet Mill men, but at other times do Ordinary Labor.

Number employed receiving a man's full wage,	6
Average number of days employed during the year,	182
Average daily wage,	$1 83
Entire earnings for the year of this class,	1,995 94
Highest earnings received by two workmen of this class, were respectively,	$648 00, $295 00

MACHINE SHOP, PHILADELPHIA.

Machinists—Second Class, Jobbing Department.

Number employed,	3
Average number of days that such workmen was employed during the working year,	302
His wage by the day,	$1 80
Earnings for the year,	572 40
Total earnings of three workmen of this class for the working year,	1,562 40
Number of such workmen employed for less than the working year,	3
Their total earnings,	$1,060 80

Machinists—First Class, Jobbing Department.

Number employed,	3
Average number of days that such workman was employed during the working year,	302
His wage by the day,	$2 70
Earnings for the year,	826 20
Total earnings of three workmen of this class for the working year,	2,356 00
Number of such workmen employed for less than the year,	3
Their total earnings,	$1,060 80

Millwrights—Second Class.

Number employed,	3
Number of days that such workman was employed during the working year (including overtime),	407
His wage by the day,	$2 20
Earnings for the year,	895 40
Highest earnings of three workmen of this class for the working year,	2,197 80

Millwrights—First Class.

Number employed,	6
Number of days that such workman was employed during the working year (including overtime),	427
His wage by the day,	$2 90
Earnings for the year,	1,238 30
Highest aggregate earnings of six workmen of this class for the year,	5,694 70

Machinists—Second-class—Pulley Department.

Number employed,	2
Number of days that such workman was employed during the year,	306
His wage by the day,	$1 93⅓
Earnings for the year,	591 60
Highest aggregate earnings of two workmen of this class for the year,	1,140 60

Machinists—First-class—Pulley Department.

Number employed,	4
Number of days that such workman was employed during the year,	306
His wage by the day,	$2 30
Earnings for the year,	703 80
Highest aggregate earnings of three workmen of this class for the year,	1,978 80

Patternmakers.

Number employed,	3
Number of days that such workman was employed during the year,	306
His wage by the day,	$2 50
Earnings for the year,	765 00

Engineers—Stationary.

Number employed,	1
Number of days that such workman was employed during the year,	318
His wage by the day,	$2 50
Earnings for the year,	795 00

Draughtsman.

Number employed,	1
Number of days that such workman was employed during the year,	312
His wage by the day,	$2 50
Earnings for the year,	780 00

Blacksmith.

Number employed,	1
Number of days that such workman was employed during the year,	306
His wage by the day,	$2 30
Earnings for the year,	703 80

Laborers.

Number employed,	10
Number of days that such workman was employed during the year,	306
His wage by the day, average,	$1 35
Earnings for the year,	413 10
Highest aggregate earnings by 10 workmen of this class for the year,	4,131 00
Number of such workmen employed for less than year,	8

Skilled Laborers.

Number employed,	7
Number of days that such workman was employed during the year,	306
His wage by the day,	$1 60
Earnings for the year,	489 60
Highest aggregate earnings received by seven workmen of this class for the year,	3,427 20

WAGES AND EARNINGS OF EMPLOYES IN A TEXTILE FACTORY, PHILADELPHIA.

Finishers.

Number of men employed,	57
Number of days that such employé worked during the year,	288
Daily wage,	$2 01
Average earnings for the year,	578 95
Highest average earnings of five employés of this class for the year,	806 09
Number of women employed,	4
Number of days that such employé worked during the year,	288
Daily wage,	$0 86
Average earnings for the year,	247 68
Number of children employed for the year,	4
Number for less than the year,	9
Daily wage,	$0 83
Average earnings for year,	239 04

Picker-house Department.

Number of men employed,	51
Number of days that such employé worked during the year,	293
Daily wage,	$1 42½
Average earnings for the year,	417 52
Highest average earnings of five employés of this class for the year,	555 23
Number employed receiving less than a man's full wage,	2
Their total earnings for the year,	$541 39
Number of women employed,	4
Number of days that such employé worked during the year,	293
Daily wage,	$0 85¼
Average earnings for the year,	249 96
Highest average earnings of two employés of this class,	303 21
Number employed for less than the year at full wage,	2
Daily wage,	$0 83
Total earnings for the year,	130 00

Spinning Department.

Number of men employed,	20
Number of days that such employé worked during the year,	270
Daily wage,	$2 19¼
Average earnings for the year,	592 02
Highest average earnings of five employés of this class for the year,	716 46
Number employed receiving less than a man's full wage,	1
His total earnings for the year,	343 29
Number employed at full wage but for less than the year,	1
Daily wage,	$2 05
His total earnings for the year,	340 69
Number of children employed,	47
Number employed for less than the year,	1
Daily wage,	$0 71
Average earnings for the year,	190 58

Carding Department.

Number of men employed,	19
Number of days that such employé worked during the year,	289
Daily wage,	$1 98¾
Average earnings for the year,	573 45
Highest average earnings of five employés of this class for the year,	845 00
Number of women employed,	3
Number of days that such employés worked during the year,	289
Daily wage,	$1 13½
Average earnings for the year,	328 01
Number of children employed,	40
Daily wage,	$0 83¾
Average earnings for the year,	243 28

Warp and Skein Dyers.

Number employed,	19
Number of days that such employé worked during the year,	298½
Daily wage,	$2 12
Average earnings for the year,	633 04
Highest average earnings of five workmen of this class for the year,	735 26
Number employed receiving less than a man's full wage,	4
Total earnings of men receiving less than a man's full wage,	737 38
Number employed at a full wage, but for less than the year,	1
Daily wage,	$1 98
His total earnings,	357 55

Burlers.

Number of men employed,	1
Number of days that such employé worked during the year,	286
Daily wage,	$2 01
Earnings for the year,	574 86
Number employed receiving less than a man's full wage,	1
Earnings for the year,	$325 93

Burlers—Continued.

Number of women employed,	46
Number of days that such employé worked during the year,	292½
Daily wage,	$0 97½
Average earnings for the year,	283 78
Highest average earnings of five employés of this class for the year,	360 55

Beaming Department.

Number employed,	9
Number of days that such employé worked during the year,	283½
Daily wage,	$2 17½
Average earnings for the year,	616 61
Highest average earnings of five employés of this class for the year,	685 23
Number employed receiving less than a man's full wage,	3
Total earnings of men receiving less than a man's full wage,	$1,142 14
Number employed at a full wage, but for less than the year,	2
Daily wage,	$2 17½
Their total earnings,	452 40
Number of children employed,	5
Daily wage,	$0 80¾
Average earnings for the year,	228 92

WAGES AND EARNINGS IN A CARPET MANUFACTORY.

Power Loom Weavers.*

Number employed—men and women,	108
Number of days that the mill was in operation during the year,	291½
Their wage, by the piece,	4 to 6 cts. per yard.
Reckoned by day work, nearly,	$1 25
Their average earnings for the year,	$364 65
Highest average earnings received by twenty-five for the year,	$436 84

*This daily average is for the days that the mill was in operation, but as a weaver, after his piece is out may be idle for a week before getting another, he may not be actually employed more than 200 days. Good weavers average about ten dollars per week.

Dye House Hands.

Number employed,	11
Number of days such workman was employed during the year,	250½
His wage by the day,	$2 16⅔, $2 00, $1 50
Average earnings for the year,	$510 79
Highest earnings of three workmen for the year,	$1,603 96
Number receiving less than a man's full wage,	1
His earnings for the year,	$348 13

STATISTICS RELATING TO THE TIME OF EMPLOYMENT.

It is asserted in many quarters that even if the wages paid in this country be large compared with those paid in most, if not all, foreign countries, employment here is often so irregular that the yearly earnings are small. The following table is an answer, in part, to this assertion. Of course, the quantity of work to be done is dependent on many conditions. In some years, therefore, more persons are employed, and more regularly, than in others. But whenever they are not employed, whether the period of inactivity be long or short, another question must be asked, is the laborer unable to get work on any terms, or does he refuse to work because the terms offered to him are not satisfactory? Many of the gaps in the following tables represent strikes, which would not have occurred if the laborers had chosen to stay at their places. In saying this we do not mean to enter a judgment on their conduct, but only to state an obvious fact.

In studying the tables it will be seen that workmen are employed much more regularly in some industries than in others. The extremes are the coal, and the printing and publishing industries. In the last named workmen are employed with great regularity. Strikes have been rare, with only few stoppages for repairs and lack of orders. On the other hand, among the coal operators there were a considerable number of strikes, and also stoppages for lack of orders and improvements. A summary of the days that each operator was busy or idle is given at the end of each industry. It must be remembered, though, that the tables are not complete, but all the returns received have been used. Probably they are fairly representative of all the mines, furnaces, mills and other establishments in the State. The figures in the first column represent the number of days that each mine, mill, furnace or other establishment was in operation.

DAYS IN OPERATION OF INDUSTRIAL ESTABLISHMENTS.

Coal Operators.					Coal Operators.				
Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.	Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
307	. . . .	. . . .	. . . .	. . . .	122	. . . .	171	18	190
80	. . . .	. . . .	. . . .	233	225	2	. . . .	86	88
304	. . . .	. . . .	. . . .	7	194	2	29	88	119
215	40	. . . .	85	97	191	. . . .	121	. . . .	121
154	. . . .	. . . .	. . . .	159	311	. . . .	. . . .	. . . .	. . . .
209	. . . .	44	59	103	284	7	11	. . . .	18
283	10	. . . .	20	30	151	80	52	30	162
219	. . . .	. . . .	. . . .	94	283	24	. . . .	6	30
179	15	21	98	134	130	30	123	30	183
227	. . . .	82	4	86	266	. . . .	. . . .	. . . .	47
181	67	25	40	132	274	4	. . . .	12	39
212	. . . .	89	12	101	274	2	28	9	39
253	. . . .	. . . .	60	60	235	10	58	10	78
143	5	69	96	170	253	. . . .	55	. . . .	55
231	. . . .	. . . .	70	70	250	. . . .	. . . .	. . . .	63
231	. . . .	. . . .	70	70	95	. . . .	. . . .	. . . .	215
279	30	. . . .	4	34	200	20	23	26	113
232	12	17	39	68	237	. . . .	. . . .	74	74
214	21	8	67	96	146	35	132	. . . .	167
168	10	118	16	144	222	. . . .	. . . .	. . . .	92
264	7	. . . .	. . .	48	262	. . . .	51	. . . .	51
200	5	103	. . . .	108	301	1	3	1	5
220	10	70	. . . .	80	280	. . . .	. . . .	. . . .	33
180	3	60	. . . .	132	313	. . . .	. . . .	. . . .	. . . .
265	5	. . . .	30	35	190	. . . .	. . . .	60	110
239	10	66	. . . .	75	186	. . . .	. . . .	60	114
209	19	10	71	104	240	. . . .	73	. . . .	73
230	3	80	. . . .	83	148	. . . .	. . . .	. . . .	152
150	25	125	. . . .	150	243	. . . .	60	. . . .	70
195	. . . .	118	. . . .	118	240	10	. . . .	. . . .	60
136	60	107	10	177	135	. . . .	. . . .	. . . .	177
309	. . . .	. . . .	. . . .	4	227	. . . .	. . . .	68	86
309	. . . .	. . . .	. . . .	4	260	. . . .	53	. . . .	53
246	5	. . . .	60	67	223	4	. . . .	90	95
275	8	27	. . . .	35	300	. . . .	. . . .	10	13
231	. . . .	40	. . . .	82	152	. . . .	. . . .	120	181
290	. . . .	12	. . . .	12	240	. . . .	. . . .	. . . .	73
240	. . . .	73	. . . .	73	194	. . . .	105	4	119
252	10	35	15	60	303	. . . .	. . . .	. . . .	. . . .
197	. . . .	. . . .	. . . .	103	310	3	. . . .	. . . .	3
222	. . . .	. . . .	91	91	206	7	8	. . . .	106
236	. . . .	20	6	76	286	. . . .	. . . .	24	24
149	. . . .	9	97	164	257	18	. . . .	. . . .	52
197	116	. . . .	. . . .	116	240	30	. . . .	6	60
195	. . . .	78	40	118	312	. . . .	. . . .	. . . .	. . . .
239	. . . .	70	4	74	224	2	22	. . . .	89
300	3	10	. . . .	13	246	. . . .	. . . .	67	67
240	. . . .	60	. . . .	60	235	. . . .	75	. . . .	78
203	10	100	. . . .	110	296	2	10	. . . .	12
118	5	138	52	195	300	. . . .	. . . .	. . . .	13
191	. . . .	. . . .	. . . .	121	240	30	40	. . . .	73
313	. . . .	. . . .	. . . .	. . . .	195	40	60	. . . .	110
225	. . . .	88	. . . .	88	181	. . . .	132	10	132
308	. . . .	. . . .	5	5	249	26	11	. . . .	63
107	. . . .	177	29	206	140	. . . .	78	. . . .	172
182	. . . .	71	63	131	260	3	37	. . . .	49
283	14	. . . .	. . . .	29	278	. . . .	30	. . . .	34

DAYS IN OPERATION—Continued.

Coal Operators.

Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
182	7	43	. . . .	131
230	70	. . . .	81	70
209	4	. . . .	. . . .	103
300	10	. . . .	8	13
267	. . . .	. . . .	. . . .	45
240	. . . .	43	30	73
230	. . . .	. . . .	7	82
249	64	. . . .	. . . .	64
200	25	75	. . . .	100
135	5	172	. . . .	177
268	12	30	. . . .	45
61	10	12	. . . .	252
210	. . . .	72	26	98
223	. . . .	16	71	87
251	23	. . . .	38	61
246	. . . .	. . . .	. . . .	64
133	5	15	. . . .	179
192	8	. . . .	100	108
279	30	. . . .	. . . .	32
285	. . . .	. . . .	. . . .	27
226	. . . .	. . . .	. . . .	86
232	. . . .	. . . .	72	81
95	. . . .	. . . .	. . . .	218
229	7	. . . .	77	84
222	. . . .	. . . .	90	90
238	. . . .	61	14	75
191	11	111	. . . .	122
259	. . . .	. . . .	. . . .	54
200	. . . .	26	. . . .	112
294	. . . .	9	. . . .	18
223	. . . .	. . . .	90	90
253	. . . .	. . . .	60	60
273	. . . .	40	. . . .	40
160	40	. . . .	70	140
295	. . . .	. . . .	10	18
124	16	114	2	188
91	. . . .	209	. . . .	220
200	. . . .	113	. . . .	113
249	. . . .	. . . .	. . . .	64
171	13	104	25	142
184	. . . .	70	. . . .	121
217	. . . .	10	10	90
275	. . . .	35	. . . .	38
223	10	67	. . . .	77
175	75	. . . .	6	131
263	. . . .	. . . .	. . . .	42
200	1	88	20	110
272	. . . .	41	. . . .	41
171	22	. . . .	98	142
226	8	37	42	87
204	1	101	. . . .	102
260	. . . .	. . . .	. . . .	53
240	43	15	. . . .	66
284	5	. . . .	5	19
177	129	. . . .	. . . .	129
154	9	44	101	154
230	. . . .	1	79	80

Coal Operators.

Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
194	10	50	52	112
281	3	20	2	25
216	2	. . . .	36	95
238	1	. . . .	74	75
306	. . . .	. . . .	. . . .	. . . .
203	. . . .	. . . .	55	103
197	10	92	14	116
39,904	1,609	5,816	3,687	15,364

Clothing.

300	. . . .	. . . .	. . . .	13
312	. . . .	. . . .	. . . .	. . . .
275	. . . .	14	. . . .	30
313	. . . .	. . . .	. . . .	. . . .
303	. . . .	. . . .	10	10
306	. . . .	. . . .	. . . .	. . . .
311	. . . .	. . . .	. . . .	. . . .
305	5	. . . .	. . . .	5
293	. . . .	. . . .	20	20
261	. . . .	. . . .	. . . .	52
310	. . . .	. . . .	. . . .	. . . .
309	. . . .	. . . .	. . . .	. . . .
311	. . . .	. . . .	. . . .	2
313	. . . .	. . . .	. . . .	. . . .
313	. . . .	. . . .	. . . .	. . . .
308	. . . .	. . . .	. . . .	. . . .
313	. . . .	. . . .	. . . .	. . . .
306	. . . .	. . . .	. . . .	. . . .
200	. . . .	60	50	110
300	. . . .	. . . .	. . . .	13
300	13	. . . .	. . . .	13
307	. . . .	. . . .	. . . .	. . . .
283	. . . .	. . . .	30	30
306	. . . .	. . . .	. . . .	. . . .
313	. . . .	. . . .	. . . .	. . . .
276	. . . .	. . . .	. . . .	30
308	. . . .	. . . .	. . . .	. . . .
260	. . . .	. . . .	. . . .	52
288	2	. . . .	. . . .	14
300	13	. . . .	. . . .	13
313	. . . .	. . . .	. . . .	. . . .
311	. . . .	. . . .	. . . .	2
306	. . . .	. . . .	. . . .	7
257	. . . .	. . . .	. . . .	56
307	. . . .	. . . .	. . . .	6
280	20	. . . .	. . . .	26
260	. . . .	. . . .	26	53
306	. . . .	. . . .	. . . .	7
11,243	53	74	136	564

DAYS IN OPERATION—Continued.

Blast Furnaces.

Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
217	96	. . . .	. . . .	96
365	. . . .	. . . .	. . . .	. . . .
275	. . . .	. . . .	. . . .	90
365	. . . .	. . . .	. . . .	. . . .
365	. . . .	. . . .	. . . .	. . . .
98	. . . .	267	. . . .	. . . .
305	60	. . . .	. . . .	60
300	18	. . . .	. . . .	52
365	. . . .	. . . .	. . . .	. . . .
365	. . . .	. . . .	. . . .	. . . .
180	84	. . . .	. . . .	185
174	. . . .	. . . .	. . . .	191
266	. . . .	. . . .	99	99
295	40	19	11	70
227	60	. . . .	78	138
281	. . . .	. . . .	50	74
365	. . . .	. . . .	. . . .	. . . .
255	95	. . . .	. . . .	110
365	. . . .	. . . .	. . . .	. . . .
365	. . . .	. . . .	. . . .	. . . .
330	35	. . . .	. . . .	35
158	. . . .	207	. . . .	207
301	64	. . . .	. . . .	64
278	. . . .	. . . .	87	87
171	. . . .	40	154	194
123	232	. . . .	. . . .	242
365	. . . .	. . . .	. . . .	. . . .
353	12	. . . .	. . . .	12
281	. . . .	. . . .	84	84
218	117	. . . .	10	147
181	128	. . . .	. . . .	184
345	20	. . . .	. . . .	20
313	10	30	. . . .	52
275	. . . .	. . . .	90	90
359	. . . .	. . . .	6	6
314	. . . .	. . . .	51	51
240	. . . .	. . . .	. . . .	125
365	. . . .	. . . .	. . . .	. . . .
358	. . . .	. . . .	. . . .	7
360	5	. . . .	. . . .	5
365	. . . .	. . . .	. . . .	. . . .
182	. . . .	. . . .	. . . .	183
330	. . . .	. . . .	. . . .	35
365	. . . .	. . . .	. . . .	. . . .
300	. . . .	. . . .	. . . .	65
342	23	. . . .	. . . .	23
365	. . . .	. . . .	. . . .	. . . .
277	68	. . . .	. . . .	88
276	. . . .	. . . .	89	89
213	71	80	1	152
286	35	. . . .	. . . .	79
365	. . . .	. . . .	. . . .	. . . .
365	. . . .	. . . .	. . . .	. . . .
325	40	. . . .	. . . .	40
365	. . . .	. . . .	. . . .	. . . .
231	120	. . . .	14	134
104	208	. . . .	. . . .	208
303	. . . .	. . . .	. . . .	62

Blast Furnaces.

Number of days in operation during the calender year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
365	. . . .	. . . .	. . . .	. . . .
365	. . . .	. . . .	. . . .	. . . .
365	. . . .	. . . .	. . . .	. . . .
365	. . . .	. . . .	. . . .	. . . .
279	. . . .	. . . .	. . . .	27
284	6	. . . .	75	81
323	. . . .	. . . .	. . . .	42
365	. . . .	. . . .	. . . .	. . . .
305	60	. . . .	. . . .	60
305	60	. . . .	. . . .	. . . .
365	. . . .	. . . .	. . . .	. . . .
365	. . . .	. . . .	. . . .	. . . .
288	77	. . . .	. . . .	77
290	75	. . . .	. . . .	75
337	28	. . . .	. . . .	28
288	. . . .	. . . .	. . . .	77
361	1	. . . .	. . . .	4
22,455	1,948	643	899	4,406

Clay.

292	18	. . . .	. . . .	21
306	. . . .	. . . .	. . . .	7
150	. . . .	. . . .	. . . .	163
286	20	. . . .	. . . .	20
150	. . . .	. . . .	10	150
120	30	150	. . . .	180
286	14	. . . .	. . . .	14
303	10	. . . .	. . . .	10
283	30	. . . .	. . . .	30
200	. . . .	. . . .	. . . .	100
300	10	. . . .	. . . .	10
313	. . . .	. . . .	. . . .	. . . .
300	12	. . . .	. . . .	12
307	2	. . . .	. . . .	6
291	18	. . . .	. . . .	18
100	5	200	. . . .	205
299	10	. . . .	. . . .	10
250	60	. . . .	. . . .	60
293	. . . .	. . . .	12	12
280	10	. . . .	10	20
226	30	56	. . . .	86
300	10	. . . .	. . . .	10
250	. . . .	. . . .	. . . .	62
200	. . . .	. . . .	. . . .	112
310	. . . .	. . . .	. . . .	. . . .
300	. . . .	. . . .	. . . .	12
250	20	30	. . . .	55
285	. . . .	26	. . . .	26
313	. . . .	. . . .	. . . .	. . . .
213	20	. . . .	. . . .	100
313	. . . .	. . . .	. . . .	. . . .
300	10	. . . .	. . . .	13
300	. . . .	. . . .	. . . .	13
8,669	339	462	32	1,537

DAYS IN OPERATION—Continued.

Rolling Mills and Steel Works.

Number of days in operation during the calender year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
231	28	14	. . . .	81
288	18	. . . .	. . . .	18
165	10	138	. . . .	148
275	36	. . . .	. . . .	36
275	25	. . . .	. . . .	25
168	20	125	. . . .	145
270	10	. . . .	. . . .	30
287	24	. . . .	. . . .	24
200	50	50	. . . .	100
275	. . . .	. . . .	30	30
283	30	. . . .	. . . .	30
280	21	. . . .	. . . .	32
300	. . . .	. . . .	. . . .	. . . .
307	. . . .	. . . .	. . . .	6
306	5	. . . .	. . . .	5
307	. . . .	. . . .	. . . .	6
313	. . . .	. . . .	. . . .	. . . .
300	10	. . . .	. . . .	10
365	. . . .	. . . .	. . . .	. . . .
200	42	58	12	112
213	26	58	. . . .	95
294	6	. . . .	. . . .	18
300	10	. . . .	. . . .	13
295	18	. . . .	. . . .	18
293	6	. . . .	. . . .	14
275	10	. . . .	. . . .	14
275	25	. . . .	. . . .	25
250	30	30	. . . .	60
308	. . . .	. . . .	. . . .	5
303	. . . .	. . . .	. . . .	. . . .
286	22	. . . .	. . . .	22
290	21	. . . .	. . . .	23
300	10	. . . .	. . . .	10
276	33	. . . .	. . . .	33
289	15	. . . .	. . . .	4
285	20	. . . .	. . . .	25
307	5	. . . .	. . . .	5
300	. . . .	. . . .	. . . .	. . . .
257	52	. . . .	. . . .	52
282	18	. . . .	. . . .	30
280	. . . .	. . . .	13	20
290	10	. . . .	. . . .	10
290	23	. . . .	. . . .	23
295	18	. . . .	. . . .	18
280	21	. . . .	. . . .	21
208	30	74	. . . .	104
266	23	. . . .	24	47
269	28	14	. . . .	42
331	19	15	. . . .	34
286	15	. . . .	5	20
294	15	. . . .	. . . .	15
308	. . . .	. . . .	. . . .	. . . .
294	9	. . . .	5	18
274	12	. . . .	23	39
290	16	. . . .	. . . .	23
260	16	89	. . . .	105
306	6	. . . .	. . . .	6

Rolling Mills and Steel Works.

Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
300	2	. . . .	. . . .	2
230	30	40	. . . .	70
260	53	. . . .	. . . .	53
300	8	. . . .	. . . .	12
286	18	. . . .	. . . .	23
305	. . . .	. . . .	. . . .	8
261	52	. . . .	. . . .	52
310	. . . .	. . . .	. . . .	2
276	37	. . . .	. . . .	37
278	35	. . . .	. . . .	35
238	. . . .	. . . .	. . . .	75
264	8	30	9	47
269	43	. . . .	. . . .	43
300	5	2	. . . .	7
307	. . . .	. . . .	. . . .	6
300	6	. . . .	. . . .	6
153	72	81	. . . .	153
260	25	. . . .	. . . .	46
247	7	. . . .	. . . .	59
300	7	. . . .	. . . .	7
21,338	1,325	818	121	2,592

Brick.

240	. . . .	. . . .	. . . .	73
175	. . . .	. . . .	. . . .	137
264	30	. . . .	6	36
240	. . . .	. . . .	. . . .	72
200	. . . .	. . . .	. . . .	112
271	. . . .	. . . .	. . . .	35
203	. . . .	. . . .	. . . .	108
208	26	. . . .	. . . .	104
212	1	. . . .	. . . .	100
147	3	. . . .	12	165
180	. . . .	. . . .	. . . .	132
110	. . . .	. . . .	. . . .	202
150	. . . .	. . . .	. . . .	160
147	. . . .	. . . .	2	166
100	. . . .	. . . .	1	212
150	. . . .	. . . .	5	160
180	. . . .	. . . .	7	112
160	7	. . . .	. . . .	150
160	. . . .	. . . .	. . . .	147
120	. . . .	. . . .	. . . .	193
195	. . . .	. . . .	. . . .	118
115	. . . .	. . . .	. . . .	198
208	. . . .	. . . .	26	99
4,135	67	. . . .	59	2,991

DAYS IN OPERATION—Continued.

Slate.

Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
250	. . . .	. . . .	. . . .	50
230	. . . .	. . . .	. . . .	83
264	. . . .	. . . .	. . . .	49
240	52	. . . .	10	72
250	8	. . . .	. . . .	62
170	. . . .	. . . .	. . . .	142
276	. . . .	. . . .	. . . .	37
313	. . . .	. . . .	. . . .	. . . .
240	21	. . . .	. . . .	73
270	10	20	. . . .	41
200	. . . .	. . . .	. . . .	110
275	15	. . . .	. . . .	25
234	. . . .	52	. . . .	79
240	. . . .	30	. . . .	73
261	52	. . . .	. . . .	52
190	. . . .	. . . .	. . . .	123
250	. . . .	. . . .	. . . .	63
253	3	. . . .	10	60
225	10	. . . .	. . . .	88
264	. . . .	44	. . . .	49
306	. . . .	. . . .	. . . .	7
285	28	. . . .	. . . .	28
213	. . . .	. . . .	. . . .	100
283	12	18	. . . .	30
213	30	60	. . . .	100
6,195	241	224	20	1,596

Miscellaneous Iron.

Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
298	. . . .	. . . .	. . . .	15
310	. . . .	. . . .	. . . .	. . . .
300	10	. . . .	. . . .	10
283	30	. . . .	. . . .	30
270	10	30	2	42
247	33	33	. . . .	66
298	8	. . . .	. . . .	15
308	. . . .	. . . .	. . . .	5
276	24	. . . .	. . . .	37
267	20	20	. . . .	40
310	. . . .	. . . .	. . . .	. . . .
307	. . . .	. . . .	. . . .	. . . .
305	3	. . . .	. . . .	3
305	2	. . . .	. . . .	2
303	4	. . . .	. . . .	4
304	3	. . . .	. . . .	3
303	6	. . . .	. . . .	8
275	10	. . . .	. . . .	33
303	10	. . . .	. . . .	10
297	12	3	. . . .	15
263	. . . .	. . . .	16	44
285	14	14	. . . .	28
305	. . . .	. . . .	. . . .	8
292	16	. . . .	. . . .	16
306	. . . .	. . . .	. . . .	7
291	. . . .	. . . .	. . . .	22
14,352	310	345	150	1,063

Miscellaneous Iron.

300	. . . .	. . . .	. . . .	. . . .
297	8	. . . .	. . . .	16
300	13	. . . .	. . . .	13
300	. . . .	. . . .	. . . .	. . . .
240	. . . .	. . . .	. . . .	60
260	20	. . . .	. . . .	50
225	12	75	. . . .	87
204	14	78	. . . .	92
300	. . . .	. . . .	. . . .	. . . .
306	. . . .	. . . .	. . . .	. . . .
300	8	. . . .	. . . .	8
181	. . . .	. . . .	132	132
300	12	. . . .	. . . .	12
300	. . . .	. . . .	. . . .	10
300	5	. . . .	. . . .	. . . .
298	3	. . . .	. . . .	5
308	. . . .	. . . .	. . . .	5
221	. . . .	92	. . . .	92
300	. . . .	. . . .	. . . .	. . . .
306	. . . .	. . . .	. . . .	. . . .
305	. . . .	. . . .	. . . .	. . . .
282	. . . .	. . . .	. . . .	18
308	. . . .	. . . .	. . . .	. . . .
300	. . . .	. . . .	. . . .	. . . .

Shirts, Collars, &c.

300	12	. . . .	. . . .	12
300	. . . .	. . . .	. . . .	12
300	6	. . . .	. . . .	13
306	. . . .	. . . .	. . . .	. . . .
300	13	. . . .	. . . .	13
308	2	. . . .	. . . .	6
308	1	. . . .	. . . .	6
300	. . . .	. . . .	. . . .	12
309	. . . .	. . . .	. . . .	. . . .
305	. . . .	. . . .	. . . .	. . . .
300	13	. . . .	. . . .	13
313	. . . .	. . . .	. . . .	. . . .
300	. . . .	. . . .	. . . .	12
309	. . . .	. . . .	. . . .	. . . .
306	. . . .	. . . .	. . . .	. . . .
300	. . . .	. . . .	. . . .	13
305	. . . .	. . . .	. . . .	. . . .
310	. . . .	. . . .	. . . .	. . . .
313	. . . .	. . . .	. . . .	. . . .
280	. . . .	. . . .	. . . .	30
310	3	. . . .	. . . .	3
6,382	50	. . . .	. . . .	145

DAYS IN OPERATION—Continued.

Foundries and Machine Shops.					Foundries and Machine Shops.				
Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.	Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
308				5	275	12	26		38
200				112	251				59
306					300	5			5
150	150			150	310				3
305					308				5
300	10			10	294				19
300				12	306				7
300	13			13	313				
300	4			4	280	12			20
300					301	2			11
308		5		5	302	10			10
285	18			18	300	8			8
246	31		29	60	313				
250				62	256	4			44
305					300	4			4
302					315				
308					265			35	35
312					240	3			60
230	20	26	36	82	308				
306	5			7	298			10	15
250		30		50	253				56
150		100	60	160	195	40			105
200	43			103	296	4			8
297				9	308				5
275	12	24		36	300	6			6
300	13			13	300				10
200		100		100	303				7
306					306				6
306				6	295	5			5
300				13	307				
275	12			37	396	6			13
300				12	308				4
225	25	40		85	300				
310				3	246	10			59
300	12			12	250		50		60
294	6	12		18	303	6			9
180	30	103		133	307				
300					295	14			14
313					271				57
280	20			20	307	1			1
313					306	3			7
307	6			6	300	8			8
313					306	2			2
306				7	295	13			18
300				13	280				20
276	24			24	300				
250		50		50	300	4	6		11
313					310	3			3
306	1			7	286	14			14
300					312				
252	11		41	52	305	3			8
300					301	7			12
292				18	309				4
295		6		12	306				7
250		60		60	307				
242				61	300				13
310				3	300				13

DAYS IN OPERATION—Continued.

Foundries and Machine Shops.				
Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
301	12	. . . .	. . . .	12
307	. . . .	. . . .	. . . .	5
305	4	. . . .	. . . .	4
284	29	. . . .	. . . .	29
307	. . . .	. . . .	. . . .	6
310	. . . .	. . . .	. . . .	. . . .
300	10	. . . .	. . . .	10
295	. . . .	. . . .	. . . .	8
303	. . . .	6	. . . .	6
290	5	. . . .	. . . .	22
195	. . . .	. . . .	. . . .	117
302	4	. . . .	. . . .	10
300	. . . .	. . . .	. . . .	. . . .
306	. . . .	. . . .	. . . .	. . . .
312	. . . .	. . . .	. . . .	. . . .
298	. . . .	. . . .	. . . .	7
200	. . . .	100	. . . .	112
306	2	. . . .	. . . .	7
300	12	. . . .	. . . .	12
301	. . . .	. . . .	. . . .	5
300	. . . .	. . . .	. . . .	13
306	. . . .	. . . .	. . . .	. . . .
238	14	60	. . . .	74
302	2	8	. . . .	10
280	. . . .	. . . .	. . . .	32
306	. . . .	. . . .	. . . .	7
225	10	30	. . . .	75
270	36	6	. . . .	42
301	6	. . . .	. . . .	6
310	. . . .	. . . .	. . . .	. . . .
305	3	. . . .	. . . .	7
203	. . . .	79	21	100
300	6	. . . .	. . . .	12
304	6	. . . .	. . . .	6
299	7	. . . .	. . . .	14
307	. . . .	. . . .	. . . .	6
300	. . . .	. . . .	. . . .	. . . .
307	6	. . . .	. . . .	6
309	. . . .	. . . .	. . . .	4
308	2	. . . .	. . . .	2
313	. . . .	. . . .	. . . .	. . . .
302	. . . .	. . . .	. . . .	11
226	5	. . . .	. . . .	86
254	7	. . . .	. . . .	59
310	7	. . . .	. . . .	8
261	. . .	52	. . . .	52
258	. . . .	55	. . . .	55
300	. . . .	. . . .	. . . .	13
223	90	. . . .	. . . .	90
306	. . . .	. . . .	. . . .	7
306	. . . .	. . . .	. . . .	7
300	12	. . . .	. . . .	12
301	. . . .	. . . .	. . . .	12
304	. . . .	. . . .	. . . .	9
276	30	. . . .	. . . .	30
307	2	. . . .	1	3

Foundries and Machine Shops.				
Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
303	4	. . . .	. . . .	4
307	3	. . . .	. . . .	6
307	. . . .	. . . .	. . . .	6
306	. . . .	. . . .	. . . .	6
304	. . . .	. . . .	. . . .	9
281	. . . .	. . . .	. . . .	25
307	. . . .	. . . .	. . . .	6
307	. . . .	. . . .	. . . .	6
307	. . . .	. . . .	. . . .	6
307	. . . .	. . . .	. . . .	6
308	. . . .	. . . .	. . . .	5
307	. . . .	. . . .	. . . .	6
307	. . . .	. . . .	. . . .	6
274	14	18	. . . .	32
303	6	. . . .	. . . .	10
309	. . . .	. . . .	. . . .	4
304	. . . .	9	. . . .	9
305	. . . .	. . . .	. . . .	8
307	. . . .	1	. . . .	6
308	2	. . . .	. . . .	2
278	29	. . . .	. . . .	35
250	. . . .	63	. . . .	63
307	. . . .	. . . .	. . . .	6
307	. . . .	. . . .	. . . .	6
295	4	. . . .	. . . .	11
306	. . . .	. . . .	. . . .	7
309	. . . .	. . . .	. . . .	4
310	. . . .	. . . .	. . . .	3
57,190	1,066	1,125	233	4,116

Petroleum Refiners.				
300	. . . .	. . . .	. . . .	12
300	13	. . . .	. . . .	13
313	. . . .	. . . .	. . . .	. . . .
300	. . . .	. . . .	. . . .	. . . .
313	. . . .	. . . .	. . . .	. . . .
250	30	. . . .	. . . .	60
306	. . . .	. . . .	. . . .	. . . .
365	. . . .	. . . .	. . . .	. . . .
275	25	. . . .	. . . .	25
285	15	. . . .	. . . .	15
308	. . . .	. . . .	. . . .	. . . .
300	10	. . . .	. . . .	10
310	3	. . . .	. . . .	3
310	3	. . . .	. . . .	3
306	. . . .	. . . .	. . . .	7
365	. . . .	. . . .	. . . .	. . . .
282	. . . .	. . . .	. . . .	31
365	. . . .	. . . .	. . . .	. . . .
5,553	99	. . . .	. . . .	179

DAYS IN OPERATION—Continued.

Woolen Goods.

Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
256	4	. . . .	. . . .	52
250	10	. . . .	. . . .	60
240	12	. . . .	. . . .	66
306	. . . .	. . . .	. . . .	. . . .
252	30	. . . .	. . . .	60
250	10	. . . .	. . . .	60
279	. . . .	. . . .	. . . .	21
217	5	90	. . . .	95
156	156	. . . .	. . . .	156
300	5	. . . .	. . . .	5
310	. . . .	. . . .	. . . .	3
306	3	. . . .	. . . .	7
286	26	. . . .	. . . .	26
175	100	. . . .	. . . .	138
250	55	. . . .	. . . .	58
140	. . . .	. . . .	. . . .	172
275	20	. . . .	. . . .	37
200	. . . .	. . . .	. . . .	100
300	12	. . . .	. . . .	12
282	25	. . . .	. . . .	25
300	. . . .	. . . .	. . . .	13
291	3	. . . .	6	17
134	. . . .	82	. . . .	164
296	3	. . . .	. . . .	10
293	6	. . . .	. . . .	18
200	. . . .	. . . .	. . . .	112
250	60	. . . .	. . . .	60
234	. . . .	78	. . . .	78
200	. . . .	112	. . . .	112
250	55	. . . .	. . . .	58
200	78	35	. . . .	113
260	53	. . . .	. . . .	53
70	. . . .	. . . .	. . . .	242
275	18	. . . .	. . . .	38
300	7	. . . .	. . . .	12
235	. . . .	. . . .	. . . .	70
300	2	. . . .	. . . .	13
221	12	80	. . . .	92
275	. . . .	. . . .	. . . .	33
300	. . . .	. . . .	. . . .	. . . .
300	13	. . . .	. . . .	13
300	12	. . . .	. . . .	13
307	. . . .	. . . .	. . . .	6
208	. . . .	90	. . . .	100
220	. . . .	. . . .	. . . .	85
306	. . . .	. . . .	. . . .	6
240	70	. . . .	. . . .	72
300	13	. . . .	. . . .	13
310	. . . .	. . . .	. . . .	3
100	. . . .	105	108	213
200	12	. . . .	. . . .	113
224	30	. . . .	. . . .	89
12,929	920	672	114	3,187

Cotton and Woolen Goods.

Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
300	5	. . . .	. . . .	13
300	7	. . . .	. . . .	12
292	6	. . . .	. . . .	14
303	10	. . . .	. . . .	10
290	10	. . . .	. . . .	23
307	2	. . . .	. . . .	5
270	18	. . . .	3	41
300	6	. . . .	. . . .	12
310	. . . .	. . . .	. . . .	. . . .
302	2	. . . .	. . . .	5
300	10	. . . .	. . . .	10
306	5	. . . .	. . . .	7
305	5	. . . .	. . . .	8
300	8	. . . .	. . . .	13
300	10	. . . .	. . . .	10
290	. . . .	. . . .	. . . .	22
308	1	. . . .	. . . .	1
300	. . . .	. . . .	. . . .	13
305	8	. . . .	. . . .	8
306	. . . .	. . . .	. . . .	. . . .
278	13	. . . .	. . . .	22
270	40	. . . .	. . . .	73
295	12	. . . .	. . . .	14
300	. . . .	. . . .	. . . .	13
304	. . . .	. . . .	. . . .	2
304	. . . .	. . . .	. . . .	8
298	14	. . . .	. . . .	14
306	6	. . . .	. . . .	6
310	. . . .	. . . .	. . . .	3
310	. . . .	. . . .	. . . .	3
300	. . . .	. . . .	. . . .	13
9,269	198	. . . .	3	368

Coverlets.

306	. . . .	. . . .	. . . .	. . . .
160	. . . .	140	. . . .	150
311	. . . .	. . . .	. . . .	2
308	. . . .	. . . .	. . . .	5
306	. . . .	. . . .	. . . .	7
1,391	. . . .	140	. . . .	164

Lace Goods.

300	. . . .	. . . .	. . . .	12
300	. . . .	. . . .	. . . .	6
600	. . . .	. . . .	. . . .	18

DAYS IN OPERATION—Continued.

Carpets.

Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
240	4			60
210		102		102
307	6			6
300		12		12
200		112		112
190		120		122
289	4	20		24
235		65		65
288				25
300				13
267		3		46
224		67		88
300				
270				42
300				12
285	3	20		23
290		21		21
250	10	30		62
308				5
310				3
310				3
275				38
300	5			13
250				63
234				78
300				10
300	8			8
300				12
307				6
289	13			23
200		100		112
293	20			20
308	1			4
300	3			13
303	10			10
306				7
304	3			9
299	4	10		14
304	8			8
300	10			13
300				13
294				19
300	4	9		13
253		60		60
300	12			13
255		58		58
300				13
300				12
290		12		14
211	10			10
300				12
300				13
300	3			3
204		48	48	100

Carpets.

Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
300				12
308	4			4
310				
294				18
300				12
220	30	90		120
150				162
308				
308				5
200	5	100		105
305	3			7
300	3			9
234				78
307				4
260	2	51		53
307				6
300	6			6
294	8		11	19
250		5	5	57
219		30		87
249	10	45		55
307				6
21,082	212	1,190	64	2,485

Upholstery.

200	12	60	21	100
263			49	49
249	4	20	40	64
308	1			1
306				
290	3	14		22
306	7			7
250	2			54
232	12	60		80
308				
150		150		150
260		52		52
303				
280	3		30	33
259			48	54
276		36		36
100				212
275	5	30		35
280	10	22		32
300				13
306				7
5,501	59	944	188	1,001

DAYS IN OPERATION—Continued.

Hosiery and Knit Goods.

Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
305				7
283				26
200				113
235		78		78
100		213		213
300				12
308	5			5
263	12	13		50
300	12			12
250	3	60		63
304	2			9
300	6			6
200	13	100		113
208			10	100
268	15	30		45
306				
260				50
305	1			8
273				26
294	5			10
206		106		106
229				78
305				
226		80		80
235				65
256	5	45		50
250	5			60
300				
300				
231		75		75
288	4	14		18
290				23
306				
300				12
303				10
250	7			63
250		60		60
300	2			2
308				
306				
268	7	32		45
106		200		200
300				
300	10			10
300				
110				203
306				
300	8			8
260	12	30		50
274	24	12		36
308				5
240		60		60
306				6
300	5			13

Hosiery and Knit Goods.

Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
300	3	10		13
300	4			4
150	6	150		156
300	6			6
275		31		31
304				8
256	14	36		50
300	10			10
280	1			25
16,844	207	1,435	10	2,587

Cotton Goods.

294	2	14		19
303	10			10
300	10			10
307	1			1
300				7
306				6
264	42			42
262	29			44
306				7
301	5			12
310	3			3
300				7
310				
307				6
308				4
300	2			2
300	12			12
211		90	12	102
300				
310				
300	9			9
301	4			4
325				
301	4			4
283	18			24
308				5
298				14
289	15			15
288	10			15
308				5
309				4
310				3
9,519	176	104	12	396

DAYS IN OPERATION—Continued.

Yarns.					Yarns.				
Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.	Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
310	. . . .	. . . .	. . . .	. . . .	300	. . . .	. . . .	. . . .	13
295	12	. . . .	. . . .	12	305	. . . .	. .	. . .	8
285	. . . .	10	. . . .	15					
300	. . . .	. . . .	. . . .	. . . .	16,690	501	690	. . . .	1,578
304	4	. . . .	. . . .	4					
278	21	14	. . . .	35					
301	. . . .	. . . .	. . . .	7	**Worsted Yarns.**				
286	3	18	. . . .	27					
310	. . . .	. . . .	. . . .	3					
300	10	. . . .	. . . .	10	132	3	. . . .	4	168
290	6	21	. . . .	27	306	. . . .	. . . .	. . . .	. . . .
300	12	. . . .	. . . .	12	243	50	. . . .	20	70
300	7	. . . .	. . . .	11	300	2	. . . .	. . . .	2
300	12	. . . .	. . . .	12	300	3	. . . .	. . . .	13
300	13	. . . .	. . . .	13	300	13	. . . .	. . . .	13
298	12	. . . .	. . . .	12	276	. . . .	36	. . . .	36
295	2	12	. . . .	14					
300	. . . .	. . . .	. . . .	. . . .	1,857	71	36	24	302
300	6	. . . .	. . . .	12					
298	7	. . . .	. . . .	11					
194	118	. . . .	. . . .	118	**Shoddy Goods.**				
300	. . . .	. . . .	. . . .	. . . .					
199	. . . .	102	. . . .	106					
300	12	. . . .	. . . .	12	300	. . . .	. . . .	. . . .	12
312	12	. . . .	. . . .	12	276	. . . .	30	. . . .	30
150	5	150	. . . .	155	280	10	. . . .	. . . .	10
300	12	. . . .	. . . .	12	300	3	. . . .	. . . .	3
307	6	. . . .	. . . .	6	240	60	. . . .	. . . .	70
285	6	. . . .	. . . .	15	255	12	46	. . . .	58
261	15	30	. . . .	22	306	4	. . . .	. . . .	7
266	7	40	. . . .	47					
285	28	. . . .	. . . .	28	1,957	89	76	. . . .	190
278	. . . .	. . . .	. . . .	30					
306	7	. . . .	. . . .	7					
306	. . . .	. . . .	. . . .	. . . .	**Hats and Caps.**				
300	12	. . . .	. . . .	12					
300	. . . .	. . . .	. . . .	. . . .					
230	20	60	. . . .	80	193	. . . .	120	. . . .	120
305	. . . .	. . . .	. . . .	. . . .	309	. . . .	. . . .	. . . .	3
300	10	. . . .	. . . .	10	290	. . . .	. . . .	. . . .	16
250	7	30	. . . .	57	159	. . . .	154	. . . .	154
250	10	38	. . . .	58	260	6	7	. . . .	52
300	. . . .	. . . .	. . . .	13	305	3	. . . .	. . . .	3
309	. . . .	. . . .	. . . .	4	300	. . . .	. . . .	. . . .	. . . .
255	. . . .	. . . .	. . . .	58	250	21	25	. . . .	56
301	12	. . . .	. . . .	12	235	15	60	. . . .	75
300	. . . .	. . . .	. . . .	12	290	2	8	. . . .	10
289	. . . .	. . . .	. . . .	24	252	. . . .	52	. . . .	52
208	. . . .	. . . .	. . . .	95	280	. . . .	15	. . . .	29
234	. . . .	35	. . . .	79	200	. . . .	100	. . . .	100
297	12	. . . .	. . . .	16	300	. . . .	9	. . . .	9
300	3	. . . .	. . . .	13	254	. . . .	. . . .	. . . .	58
213	. . . .	100	. . . .	100	313	. . . .	. . . .	. . . .	. . . .
223	60	30	. . . .	90	310	. . . .	. . . .	. . . .	3
305	. . . .	. . . .	. . . .	8	230	. . .	65	. . . .	76
312	. . . .	. . . .	. . . .	1					
305	. . . .	. . . .	. . . .	8	4,730	47	615	. . .	816

DAYS IN OPERATION—Continued.

Lumber.					Lumber.				
Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.	Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
300	10	. . . .	. . . .	10	250	20	30	. . . .	50
30	12	. . . .	. . . .	282	286	12	. . . .	. . . .	12
301	6	. . . .	. . . .	12	300	12	. . . .	. . . .	12
300	10	. . . .	. . . .	13	220	. . . .	. . . .	. . . .	93
240	6	. . . .	. . . .	70	313	. . . .	. . . .	. . . .	. . . .
223	8	. . . .	. . . .	89	313	. . . .	. . . .	. . . .	. . . .
290	2	. . . .	. . . .	20	300	. . . .	. . . .	. . . .	10
260	. . . .	. . . .	. . . .	52	282	24	. . . .	. . . .	24
240	30	30	. . . .	60	300	. . . .	. . . .	. . . .	13
288	6	. . . .	. . . .	24	192	8	. . . .	. . . .	120
312	. . . .	. . . .	. . . .	. . . .	248	. . . .	64	. . . .	64
202	10	8	. . . .	110	120	10	. . . .	. . . .	192
60	. . . .	. . . .	. . . .	273	300	. . . .	. . . .	. . . .	13
60	. . . .	. . . .	. . . .	273	293	20	. . . .	. . . .	20
152	20	128	. . . .	148	100	10	190	. . . .	200
125	. . . .	. . . .	. . . .	175	115	40	156	. . . .	156
113	9	188	. . . .	197	250	50	. . . .	. . . .	50
137	. . . .	. . . .	. . . .	163	180	30	90	. . . .	120
300	12	. . . .	. . . .	12	120	10	. . . .	. . . .	190
78	. . . .	235	. . . .	235	285	. . . .	. . . .	. . . .	28
200	. . . .	. . . .	. . . .	100	170	30	. . . .	. . . .	130
300	10	. . . .	. . . .	10	170	3	. . . .	. . . .	140
200	. . . .	. . . .	. . . .	165	300	. . . .	. . . .	. . . .	. . . .
150	. . . .	. . . .	. . . .	150	270	10	30	. . . .	40
195	4	. . . .	. . . .	110	250	. . . .	. . . .	. . . .	60
225	. . . .	. . . .	. . . .	75	250	. . . .	50	. . . .	50
313	. . . .	. . . .	. . . .	. . . .	200	18	. . . .	. . . .	95
150	150	. . . .	. . . .	150	268	52	. . . .	. . . .	52
104	10	. . . .	. . . .	200	250	50	. . . .	. . . .	60
302	10	. . . .	. . . .	10	286	22	. . . .	. . . .	22
225	. . . .	. . . .	. . . .	87	220	30	. . . .	. . . .	80
200	. . . .	. . . .	. . . .	100	200	10	. . . .	. . . .	100
285	15	. . . .	. . . .	15	100	10	. . . .	. . . .	213
260	6	. . . .	. . . .	53	250	40	. . . .	. . . .	50
270	. . . .	. . . .	. . . .	36	212	14	35	. . . .	90
28	. . . .	. . . .	. . . .	285	250	30	. . . .	. . . .	50
300	. . . .	. . . .	. . . .	10	260	40	. . . .	. . . .	40
200	10	. . . .	. . . .	100	126	180	. . . .	. . . .	180
130	5	. . . .	. . . .	170	200	20	75	. . . .	95
200	40	. . . .	. . . .	100	234	10	. . . .	. . . .	69
283	30	. . . .	. . . .	30	200	. . . .	. . . .	. . . .	100
100	90	. . . .	. . . .	200	75	. . . .	. . . .	. . . .	230
250	40	. . . .	. . . .	63	150	12	. . . .	. . . .	150
298	15	. . . .	. . . .	15	260	52	. . . .	. . . .	52
260	30	. . . .	. . . .	53	200	25	. . . .	. . . .	100
100	20	180	. . . .	200	200	113	. . . .	. . . .	113
240	. . . .	. . . .	. . . .	60	275	25	. . . .	. . . .	25
294	12	. . . .	. . . .	12	150	25	. . . .	. . . .	150
90	. . . .	. . . .	. . . .	223	150	60	. . . .	. . . .	163
130	20	. . . .	. . . .	175	200	10	. . . .	. . . .	100
175	130	. . . .	. . . .	130	200	. . . .	. . . .	. . . .	100
200	. . . .	. . . .	. . . .	100	300	. . . .	. . . .	. . . .	10
90	. . . .	. . . .	. . . .	210	150	15	60	. . . .	150
300	. . . .	. . . .	. . . .	. . . .	200	. . . .	100	. . . .	100
60	. . . .	. . . .	. . . .	240	122	30	. . . .	. . . .	178
250	15	. . . .	. . . .	48	200	25	10	. . . .	100
57	. . . .	. . . .	. . . .	256	150	30	. . . .	. . . .	150

DAYS IN OPERATION—Continued.

Lumber.					Lumber.				
Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.	Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
200	. . . .	. . . .	. . . .	100	263	10	. . . .	. . . .	50
217	10	. . . .	. . . .	85	121	2	. . . .	. . . .	192
150	10	150	. . . .	160	308	3	. . . .	. . . .	3
75	. . . .	. . . .	. . . .	238	275	. . . .	. . . .	. . . .	38
200	25	. . . .	. . . .	100	131	78	. . . .	. . . .	182
90	6	. . . .	. . . .	210	168	15	. . . .	. . . .	145
156	. . . .	. . . .	. . . .	144	275	25	. . . .	. . . .	25
200	. . . .	. . . .	. . . .	100	300	. . . .	. . . .	. . . .	12
250	20	. . . .	. . . .	50	200	. . . .	100	. . . .	100
300	10	. . . .	. . . .	13	213	. . . .	100	. . . .	100
200	. . . .	. . . .	. . . .	109	300	. . . .	. . . .	. . . .	13
35	. . . .	. . . .	. . . .	265	283	30	. . . .	. . . .	30
300	. . . .	. . . .	. . . .	. . . .	150	. . . .	. . . .	. . . .	160
225	15	. . . .	. . . .	65	200	6	. . . .	. . . .	112
230	6	. . . .	. . . .	76	200	4	. . . .	. . . .	113
90	. . . .	. . . .	. . . .	210	300	. . . .	. . . .	. . . .	13
268	6	. . . .	. . . .	39	175	. . . .	. . . .	. . . .	138
283	30	. . . .	. . . .	30	261	52	. . . .	. . . .	52
165	10	138	. . . .	148	90	223	. . . .	. . . .	223
150	. . . .	. . . .	. . . .	163	60	. . . .	. . . .	. . . .	247
203	20	90	. . . .	110	283	30	. . . .	. . . .	30
100	. . . .	. . . .	. . . .	213	313	. . . .	. . . .	. . . .	. . . .
300	10	. . . .	. . . .	10	200	90	23	. . . .	113
119	6	. . . .	. . . .	181	313	. . . .	. . . .	. . . .	. . . .
234	. . . .	. . . .	. . . .	66	266	12	26	. . . .	40
156	. . . .	. . . .	. . . .	156	100	30	. . . .	. . . .	206
225	. . . .	. . . .	. . . .	75	244	. . . .	. . . .	. . . .	69
165	. . . .	. . . .	. . . .	148	293	14	. . . .	. . . .	14
170	30	. . . .	. . . .	130	235	78	. . . .	. . . .	78
300	. . . .	. . . .	. . . .	. . . .	301	12	. . . .	. . . .	12
250	. . . .	. . . .	. . . .	62	304	. . . .	. . . .	. . . .	9
285	10	. . . .	. . . .	18	260	14	. . . .	. . . .	46
278	35	. . . .	. . . .	35	200	30	82	. . . .	112
150	. . . .	. . . .	. . . .	154	278	35	. . . .	. . . .	35
275	27	. . . .	. . . .	37	275	38	. . . .	. . . .	38
230	20	52	. . . .	72	208	. . . .	. . . .	. . . .	104
100	. . .	200	. . . .	200					
275	30	. . .	. . . .	38	43,342	3,641	2,999	. . . .	20,311
223	30	60	. . . .	90					
128	5	. . . .	. . . .	185	**Musical Instruments.**				
300	. . . .	. . . .	. . . .	12					
104	. . . .	. . . .	. . . .	209	270	12	30	. . . .	42
85	15	200	. . . .	215	300	. . . .	. . . .	. . . .	. . . .
193	20	. . . .	. . . .	120	248	. . . .	. . . .	. . . .	65
280	20	. . . .	. . . .	32	300	3	. . . .	. . . .	3
200	. . . .	. . . .	. . . .	112	308	. . . .	. . . .	. . . .	. . . .
160	. . . .	. . . .	. . . .	152					
150	. . . .	. . . .	. . . .	162	1,426	15	30	. . . .	110
170	130	. . . .	. . . .	130					
291	. . . .	. . . .	. . . .	16	**Boatbuilders.**				
230	5	. . . .	. . . .	82					
40	. . . .	. . . .	. . . .	273	290	10	. . . .	. . . .	10
300	. . . .	. . . .	. . . .	12	286	. . . .	. . . .	. . . .	24
184	7	119	. . . .	126					
100	212	. . . .	. . . .	212	576	10	. . .	. . . .	34
119	. . . .	. . . .	. . . .	194					
300	. . . .	. . . .	. . . .	. . . .					

DAYS IN OPERATION—Continued.

Planing Mills.

Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
295		18		18
301	6			12
200	30	73		113
308	5			5
300	6			12
166		147		147
280				25
305				8
304	9			9
300				12
300	6			6
302	2		2	4
305				
285	15			15
297				12
300	7			7
303	10			10
298	5	10		15
290	5			15
300				
150		150		150
228				80
305	7			7
244	10	59		69
300	2			10
256	18	16		44
270		10		30
302	7			11
267	10	20		30
300				12
260				40
304	5			6
208	30	60		90
309	4	1		5
303	6			10
298	12			12
300	13			13
305	2			8
270	20	23		43
290	6			23
300	7			12
305				
295	10			10
200	6	2		105
275	15	10		25
202	10	8		80
298	5			10
306	6			6
305				
291				13
300		12		12
279		20		25
298	4			10
300	2			3
303	2			8

Planing Mills.

Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
311				2
308				5
300	5			13
301	12			12
240	8	52		60
280	20			20
303				9
305				2
280	33			33
250	10	20		63
307	6			6
300	12			13
306				
306				
299	8			14
200		113		113
304	5			7
285	10	15		25
303	4			10
295	10			10
291	14			14
300	10			10
306				
300	12			12
270				43
307	6			6
156				156
282	20			24
310				3
309				4
290	23			23
231	25			82
301	1			11
299	13			13
300				13
260	25	22		53
282				31
253	35	25		60
300	12			12
280	10			13
234	6	6		79
300	10			13
313				
303	10			10
313				
265	8	36		48
307	2			6
308				5
243	10	60		70
307				6
165	25	123		148
307				6
30,240	745	1,111	2	2,848

DAYS IN OPERATION—Continued.

Carriages and Wagons.					Agricultural Implements.				
Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.	Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
300	12	. . . .	. . . .	12	234	78	. . . .	. . . .	78
308	. . . .	. . . .	. . . .	5	290	10	. . . .	. . . .	10
308	. . . .	. . . .	. . . .	. . . .	189	. . . .	124	. . . .	124
300	. . . .	. . . .	. . . .	13	311	. . . .	. . . .	. . . .	2
306	. . . .	. . . .	. . . .	. . . .	280	. . . .	. . . .	. . . .	32
300	. . . .	. . . .	. . . .	. . . .	300	12	. . . .	. . . .	12
300	. . . .	. . . .	. . . .	3	309	2	. . . .	. . . .	2
303	. . . .	6	. . . .	10	282	4	26	. . . .	30
308	. . . .	. . . .	. . . .	5	303	. . . .	. . . .	. . . .	10
307	. . . .	. . . .	. . . .	. . . .	200	. . . .	. . . .	. . . .	113
310	. . . .	. . . .	. . . .	3	312	. . . .	. . . .	. . . .	. . . .
306	. . . .	. . . .	. . . .	. . . .	300	13	. . . .	. . . .	13
300	12	. . . .	. . . .	12	296	6	. . . .	. . . .	14
273	. . . .	. . . .	. . . .	27	313	. . . .	. . . .	. . . .	. . . .
306	. . . .	. . . .	. . . .	7	300	12	. . . .	. . . .	12
290	. . . .	. . . .	. . . .	6	308	5	. . . .	. . . .	5
300	. . . .	. . . .	. . . .	12	30	30	. . . .	. . . .	279
300	. . . .	. . . .	. . . .	. . . .	300	6	. . . .	. . . .	13
300	. . . .	. . . .	. . . .	. . . .	307	. . . .	. . . .	. . . .	6
300	. . . .	. . . .	. . . .	. . . .	150	. . . .	163	. . . .	163
307	3	. . . .	. . . .	5	310	. . . .	. . . .	. . . .	3
300	. . . .	. . . .	. . . .	. . . .	300	7	. . . .	. . . .	13
300	. . . .	. . . .	. . . .	. . . .	274	13	. . . .	. . . .	39
307	4	. . . .	. . . .	6					
312	. . . .	. . . .	. . . .	. . . .	6,198	198	313	. . . .	973
310	. . . .	. . . .	. . . .	. . . .					
300	10	. . . .	. . . .	10					
300	. . . .	. . . .	. . . .	. . . .					
310	. . . .	. . . .	. . . .	. . . .					
312	. . . .	. . . .	. . . .	. . . .					
310	. . . .	. . . .	. . . .	3	261	2	34	. . . .	49
307	. . . .	. . . .	. . . .	6	300	2	. . . .	. . . .	6
302	. . . .	. . . .	. . . .	7	280	15	15	. . . .	30
290	15	. . . .	. . . .	23	287	8	18	. . . .	26
295	12	. . . .	. . . .	12	213	10	40	. . . .	100
305	. . . .	. . . .	. . . .	7	280	10	10	. . . .	26
253	. . . .	. . . .	. . . .	56	300	5	. . . .	. . . .	5
308	. . . .	. . . .	. . . .	. . . .	188	. . . .	125	. . . .	125
306	. . . .	. . . .	. . . .	. . . .	125	45	143	. . . .	188
305	. . . .	. . . .	. . . .	. . . .	300	5	. . . .	. . . .	8
306	. . . .	. . . .	. . . .	7	300	13	. . . .	. . . .	13
300	. . . .	. . . .	. . . .	7	308	. . . .	. . . .	. . . .	. . . .
306	. . . .	. . . .	. . . .	7	294	13	. . . .	. . . .	18
306	. . . .	. . . .	. . . .	6	250	. . . .	43	. . . .	55
300	13	. . . .	. . . .	13	241	4	60	. . . .	65
310	. . . .	. . . .	. . . .	. . . .	306	3	. . . .	. . . .	3
307	. . . .	. . . .	. . . .	6	306	. . . .	. . . .	. . . .	. . . .
307	. . . .	. . . .	. . . .	6	208	. . . .	104	. . . .	104
307	. . . .	. . . .	. . . .	6	240	4	60	. . . .	64
307	2	. . . .	. . . .	6	300	10	. . . .	. . . .	10
308	. . . .	. . . .	. . . .	5	299	. . . .	. . . .	. . . .	14
306	. . . .	. . . .	. . . .	7	263	3	46	. . . .	49
307	. . . .	. . . .	. . . .	6	266	6	. . . .	. . . .	40
307	. . . .	. . . .	. . . .	6	303	. . . .	. . . .	. . . .	10
16,348	83	6	. . . .	338	6,418	158	698	. . . .	1,008

Dyers.

DAYS IN OPERATION—Continued.

Brewers.				
Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
313				
313				
313				
303	22			62
200	15			112
313				
310		54		54
313				
300				
313				
310				
313				
313				
313				
313				
313				
313				
300				
280				20
303				
300				
270	30			30
305	60			60
313				
310				
313				
313				
313				
312				
313				
313				
312				
306				6
313				
300				
308	5			5
313				
300				
313				
306				7
300	5			
313				
305	6	2		8
313				
305				8
310				
365				
313				
308	4			
300				4
312				
310				
310				3
300	65			65

Brewers.				
Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
313				
313				
365				
301			12	12
300				13
300				13
300				
300				13
310				3
313				
365				
313				
300				
315				
313				
313				
300				
300				
313				
300				
312				
312				
300			7	
243	5			57
313				
306				
310				
300				
312				
313				
290	10			16
312	1			1
300				13
312			1	1
308	5			5
300		10		13
312				1
300	13			13
313				
313				
300	5			13
313				
300				
365				
312				
313				
306				
313				
307				6
313				
313				
32,355	251	66	20	644

DAYS IN OPERATION—Continued.

Tanneries.					Tanneries.				
Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.	Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
300	10	. . . .	. . . .	13	306	. . . .	. . . .	. . . .	6
300	12	. . . .	. . . .	12	306	. . . .	. . . .	. . . .	. . . .
300	6	. . . .	. . . .	6	308	5	. . . .	. . . .	5
283	20	. . . .	. . . .	20	310	. . . .	. . . .	. . . .	3
313	. . . .	. . . .	. . . .	. . . .	306	. . . .	. . . .	. . . .	. . . .
313	. . . .	. . . .	. . . .	. . . .	208	52	52	. . . .	104
250	. . . .	. . . .	. . . .	. . . .	307	2	. . . .	. . . .	4
300	. . . .	. . . .	. . . .	7	300	12	. . . .	. . . .	12
300	. . . .	. . . .	. . . .	. . . .	310	. . . .	. . . .	. . . .	2
300	. . . .	. . . .	. . . .	. . . .	310	. . . .	. . . .	. . . .	. . . .
300	. . . .	. . . .	. . . .	. . . .	300	. . . .	. . . .	. . . .	. . . .
300	7	. . . .	. . . .	7	310	. . . .	. . . .	. . . .	. . . .
305	. . . .	. . . .	. . . .	. . . .	300	6	. . . .	. . . .	6
313	. . . .	. . . .	. . . .	. . . .	308	. . . .	. . . .	. . . .	5
281	30	. . . .	. . . .	30	275	25	. . . .	. . . .	25
200	. . . .	100	. . . .	100	275	. . . .	37	. . . .	37
308	. . . .	. . . .	. . . .	5	300	. . . .	. . . .	. . . .	. . . .
310	. . . .	. . . .	. . . .	. . . .	300	12	. . . .	. . . .	12
300	. . . .	. . . .	. . . .	. . . .	258	. . . .	. . . .	. . . .	42
305	. . . .	. . . .	. . . .	. . . .	306	. . . .	. . . .	6	6
312	. . . .	. . . .	. . . .	. . . .	300	. . . .	. . . .	. . . .	. . . .
300	6	7	. . . .	13	310	. . . .	. . . .	. . . .	. . . .
216	. . . .	86	. . . .	86	310	. . . .	. . . .	. . . .	. . . .
302	10	. . . .	. . . .	10	308	2	. . . .	. . . .	5
313	. . . .	. . . .	. . . .	. . . .	300	6	. . . .	. . . .	12
310	. . . .	. . . .	. . . .	. . . .	200	. . . .	. . . .	. . . .	112
280	. . . .	. . . .	. . . .	33	300	. . . .	. . . .	. . . .	. . . .
300	10	. . . .	. . . .	10	300	. . . .	. . . .	. . . .	. . . .
300	. . . .	. . . .	. . . .	. . . .	275	37	. . . .	. . . .	37
303	8	. . . .	. . . .	8	300	. . . .	. . . .	. . . .	. . . .
300	12	. . . .	. . . .	12	305	. . . .	. . . .	. . . .	. . . .
310	. . . .	. . . .	. . . .	2	310	. . . .	. . . .	. . . .	3
300	5	. . . .	. . . .	5	240	60	12	. . . .	72
310	. . . .	. . . .	. . . .	. . . .	300	. . . .	. . . .	. . . .	. . . .
310	. . . .	. . . .	. . . .	3	300	6	. . . .	. . . .	6
311	. . . .	. . . .	. . . .	. . . .	264	. . . .	. . . .	. . . .	48
300	4	. . . .	. . . .	10	312	. . . .	. . . .	. . . .	. . . .
300	. . . .	. . . .	. . . .	. . . .	300	5	. . . .	. . . .	5
282	12	. . . .	. . . .	18	300	. . . .	. . . .	. . . .	. . . .
312	. . . .	. . . .	. . . .	. . . .	285	. . . .	. . . .	. . . .	28
310	. . . .	. . . .	. . . .	. . . .	240	72	. . . .	. . . .	72
311	. . . .	. . . .	. . . .	2	303	. . . .	. . . .	. . . .	10
313	. . . .	. . . .	. . . .	. . . .	300	. . . .	. . . .	. . . .	. . . .
305	. . . .	. . . .	. . . .	. . . .	305	5	. . . .	. . . .	5
300	. . . .	. . . .	. . . .	13	300	3	. . . .	. . . .	3
300	. . . .	. . . .	. . . .	. . . .	300	. . . .	. . . .	. . . .	. . . .
260	40	. . . .	. . . .	40	292	18	. . . .	. . . .	18
310	. . . .	. . . .	. . . .	. . . .	310	. . . .	. . . .	. . . .	. . . .
312	. . . .	. . . .	. . . .	1	309	4	. . . .	. . . .	4
305	. . . .	. . . .	. . . .	8	300	9	. . . .	. . . .	13
310	. . . .	. . . .	. . . .	3	208	. . . .	105	. . . .	105
310	. . . .	. . . .	. . . .	3	300	. . . .	. . . .	. . . .	13
313	. . . .	. . . .	. . . .	. . . .	237	15	60	. . . .	75
300	5	. . . .	. . . .	5	307	5	. . . .	. . . .	5
300	. . . .	. . . .	. . . .	. . . .	313	. . . .	. . . .	. . . .	. . . .
284	. . . .	. . . .	. . . .	26	300	6	. . . .	. . . .	13
312	. . . .	. . . .	. . . .	1	305	8	. . . .	. . . .	8

DAYS IN OPERATION—Continued.

Tanneries.

Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
300	12	. . . .	. . . .	12
300	12	. . . .	. . . .	12
200	. . . .	100	. . . .	112
300	. . . .	. . . .	. . . .	13
266	. . . .	40	. . . .	47
122	. . . .	191	. . . .	191
313	. . . .	. . . .	. . . .	. . . .
298	15	. . . .	. . . .	15
305	6	. . . .	. . . .	7
270	11	30	. . . .	43
312	. . . .	. . . .	. . . .	. . . .
312	. . . .	. . . .	. . . .	. . . .
163	150	. . . .	. . . .	150
312	. . . .	. . . .	. . . .	. . . .
290	20	. . . .	. . . .	20
270	11	30	. . . .	43
275	6	. . . .	26	38
312	. . . .	. . . .	. . . .	. . . .
312	. . . .	. . . .	. . . .	. . . .
300	. . . .	. . . .	. . . .	13
310	. . . .	. . . .	. . . .	3
313	. . . .	. . . .	. . . .	. . . .
300	. . . .	. . . .	. . . .	13
303	. . . .	. . . .	. . . .	10
301	3	. . . .	. . . .	12
313	. . . .	. . . .	. . . .	. . . .
310	. . . .	. . . .	. . . .	3
223	. . . .	90	. . . .	90
310	. . . .	. . . .	. . . .	3
313	. . . .	. . . .	. . . .	. . . .
307	6	. . . .	. . . .	6
42,492	824	940	32	2,309

Cigarmakers.

300	. . . .	. . . .	. . . .	6
280	. . . .	. . . .	. . . .	20
280	18	. . . .	12	30
300	12	. . . .	. . . .	12
300	. . . .	. . . .	. . . .	. . . .
298	. . . .	. . . .	. . . .	8
302	. . . .	. . . .	. . . .	11
306	. . . .	. . . .	. . . .	. . . .
300	. . . .	. . . .	. . . .	13
303	. . . .	. . . .	. . . .	10
312	. . . .	. . . .	. . . .	. . . .
297	. . . .	. . . .	. . . .	15
275	25	. . . .	. . . .	6
300	. . . .	. . . .	. . . .	13
258	. . . .	55	. . . .	55
294	19	. . . .	. . . .	19

Cigarmakers.

290	20	. . . .	. . . .	20
313	. . . .	. . . .	. . . .	. . . .
310	. . . .	. . . .	. . . .	. . . .
309	. . . .	. . . .	. . . .	. . . .
280	. . . .	. . . .	. . . .	32
279	5	24	. . . .	33
312	. . . .	. . . .	. . . .	1
313	. . . .	. . . .	. . . .	. . . .
223	. . . .	. . . .	. . . .	78
300	. . . .	. . . .	. . . .	12
310	. . . .	. . . .	. . . .	2
308	. . . .	. . . .	. . . .	. . . .
294	. . . .	. . . .	12	12
313	. . . .	. . . .	. . . .	. . . .
300	. . . .	. . . .	. . . .	. . . .
150	. . . .	. . . .	. . . .	162
290	20	. . . .	. . . .	23
260	. . . .	. . . .	. . . .	53
300	. . . .	10	. . . .	10
273	30	. . . .	. . . .	33
305	4	. . . .	. . . .	8
200	12	100	. . . .	113
306	3	. . . .	. . . .	7
288	6	7	. . . .	19
300	6	. . . .	. . . .	13
310	. . . .	. . . .	. . . .	3
300	6	7	. . . .	13
300	. . . .	. . . .	. . . .	13
313	. . . .	. . . .	. . . .	. . . .
300	. . . .	. . . .	. . . .	13
288	. . . .	. . . .	. . . .	25
312	. . . .	. . . .	. . . .	. . . .
13,954	186	203	24	916

Distilleries.

233	. . . .	. . . .	. . . .	79
300	. . . .	. . . .	. . . .	. . . .
200	52	. . . .	. . . .	112
130	. . . .	87	. . . .	182
281	19	. . . .	. . . .	19
150	. . . .	. . . .	. . . .	150
196	116	. . . .	. . . .	116
248	65	. . . .	. . . .	65
200	. . . .	100	. . . .	100
312	. . . .	. . . .	. . . .	. . . .
274	. . . .	39	. . . .	39
163	. . . .	. . . .	. . . .	150
153	. . . .	. . . .	. . . .	160
270	. . . .	. . . .	. . . .	30
3,110	252	226	. . . .	1,202

DAYS IN OPERATION—Continued.

Boots and Shoes.

Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
268	. . . .	44	. . . .	44
300	13	. . . .	. . . .	13
260	20	30	. . . .	50
260	. . . .	40	. . . .	40
306	. . . .	. . . .	. . . .	. . . .
306	. . . .	. . . .	. . . .	. . . .
289	4	20	. . . .	24
300	2	. . . .	. . . .	11
275	. . . .	30	. . . .	38
306	. . . .	. . . .	. . . .	. . . .
230	. . . .	52	30	82
275	13	25	. . . .	38
300	. . . .	. . . .	. . . .	12
280	15	15	. . . .	30
276	9	. . . .	28	37
312	. . . .	. . . .	. . . .	. . . .
300	10	. . . .	. . . .	10
300	12	. . . .	. . . .	12
286	26	. . . .	. . . .	26
280	20	. . . .	. . . .	20
268	. . . .	. . . .	24	45
276	5	31	. . . .	36
252	10	. . . .	30	60
300	10	. . . .	. . . .	10
264	. . . .	. . . .	36	36
288	24	. . . .	. . . .	24
262	. . . .	. . . .	40	50
270	. . . .	. . . .	42	42
277	. . . .	. . . .	35	35
285	27	. . . .	. . . .	27
265	10	. . . .	35	45
300	. . . .	. . . .	. . . .	12
263	20	. . . .	30	50
300	. . . .	. . . .	. . . .	12
276	. . . .	. . . .	30	37
277	2	. . . .	. . . .	36
10,132	262	287	363	1,044

Furniture.

313	. . . .	. . . .	. . . .	. . . .
300	. . . .	. . . .	. . . .	. . . .
313	. . . .	. . . .	. . . .	. . . .
295	12	. . . .	. . . .	18
305	6	. . . .	. . . .	8
290	20	. . . .	. . . .	20
300	. . . .	. . . .	. . . .	. . . .
286	24	. . . .	. . . .	27
300	. . . .	. . . .	. . . .	13
282	30	. . . .	. . . .	30
313	. . . .	. . . .	. . . .	. . . .
310	. . . .	. . . .	. . . .	. . . .
295	. . . .	. . . .	. . . .	18
312	. . . .	. . . .	. . . .	. . . .

Furniture.

Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
300	3	. . . .	. . . .	13
307	1	. . . .	. . . .	6
313	. . . .	. . . .	. . . .	. . . .
268	15	30	. . . .	45
300	. . . .	. . . .	. . . .	. . . .
304	2	. . . .	. . . .	2
198	. . . .	108	. . . .	108
300	. . . .	. . . .	. . . .	13
300	. . . .	. . . .	. . . .	13
300	5	. . . .	. . . .	5
310	. . . .	. . . .	. . . .	3
308	5	. . . .	. . . .	5
312	1	. . . .	. . . .	1
294	12	. . . .	. . . .	12
271	37	. . . .	. . . .	37
302	11	. . . .	. . . .	11
306	. . . .	. . . .	. . . .	7
306	. . . .	. . . .	. . . .	7
306	. . . .	. . . .	. . . .	7
296	10	. . . .	. . . .	10
288	18	. . . .	. . . .	18
289	4	. . . .	. . . .	24
10,692	216	138	. . . .	481

Flint and Green Glass.

288	. . . .	. . . .	25	25
258	10	. . . .	30	40
260	52	. . . .	16	68
250	6	. . . .	38	44
300	. . . .	. . . .	. . . .	6
260	45	. . . .	6	51
260	40	. . . .	. . . .	45
250	50	. . . .	. . . .	50
250	50	. . . .	15	65
260	. . . .	. . . .	26	52
260	45	. . . .	. . . .	45
260	56	. . . .	. . . .	56
250	50	. . . .	. . . .	50
275	33	. . . .	. . . .	36
275	36	. . . .	. . . .	37
283	30	. . . .	. . . .	30
288	10	. . . .	. . . .	20
279	36	. . . .	18	54
271	. . . .	42	. . . .	42
307	6	. . . .	. . . .	6
220	60	. . . .	30	90
257	53	. . . .	. . . .	53
260	15	. . . .	38	53
260	. . . .	. . . .	. . . .	72
248	30	. . . .	20	50
260	. . . .	. . . .	39	39
6,889	713	42	301	1,179

DAYS IN OPERATION—Continued.

Paper Mills.

Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
300	13	. . . .	. . . .	13
250	. . . .	. . . .	. . . .	60
283	30	. . . .	. . . .	30
283	12	. . . .	. . . .	25
250	15	. . . .	. . . .	63
300	. . . .	. . . .	. . . .	. . . .
300	. . . .	. . . .	. . . .	. . . .
225	. . . .	. . . .	. . . .	80
307	. . . .	. . . .	. . . .	6
309	. . . .	. . . .	. . . .	. . . .
264	23	20	. . . .	43
309	4	. . . .	. . . .	4
308	. . . .	. . . .	. . . .	. . . .
300	10	. . . .	. . . .	12
300	2	. . . .	. . . .	2
300	. . . .	. . . .	. . . .	. . . .
306	. . . .	. . . .	. . . .	7
308	. . . .	. . . .	. . . .	. . . .
306	. . . .	. . . .	. . . .	. . . .
300	5	. . . .	. . . .	11
300	. . . .	. . . .	. . . .	. . . .
233	20	60	. . . .	80
289	6	. . . .	7	24
188	15	104	. . . .	124
300	10	. . . .	. . . .	10
287	20	. . . .	. . . .	23
307	. . . .	. . . .	. . . .	. . . .
307	. . . .	. . . .	. . . .	. . . .
300	. . . .	. . . .	. . . .	. . . .
300	. . . .	. . . .	. . . .	. . . .
298	15	. . . .	. . . .	15
260	10	. . . .	. . . .	52
90	142	75	. . . .	217
276	24	. . . .	. . . .	24
200	30	. . . .	. . . .	100
300	7	. . . .	. . . .	7
300	12	. . . .	. . . .	12
308	. . . .	. . . .	. . . .	. . . .
295	15	. . . .	. . . .	18
300	12	. . . .	. . . .	12
271	42	. . . .	. . . .	42
300	. . . .	. . . .	. . . .	6
306	. . . .	. . . .	. . . .	. . . .
313	. . . .	. . . .	. . . .	. . . .
305	7	. . . .	. . . .	7
298	15	. . . .	. . . .	15
280	20	13	. . . .	33
255	6	52	. . . .	58
300	13	. . . .	. . . .	13
306	. . . .	. . . .	. . . .	7
298	15	. . . .	. . . .	15
240	16	. . . .	. . . .	70
306	. . . .	. . . .	. . . .	7
300	. . . .	. . . .	. . . .	13
313	. . . .	. . . .	. . . .	. . . .

Paper Mills.

Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
300	. . . .	. . . .	. . . .	13
298	13	. . . .	. . . .	13
300	. . . .	. . . .	. . . .	13
240	72	. . . .	. . . .	72
300	. . . .	. . . .	. . . .	. . . .
156	156	. . . .	. . . .	157
280	14	. . . .	. . . .	26
17,511	841	324	7	1,654

Box Manufacturers.

283	4	. . . .	. . . .	30
307	. . . .	. . . .	. . . .	. . . .
285	5	22	. . . .	27
306	. . . .	. . . .	. . . .	. . . .
246	5	. . . .	. . . .	67
300	3	10	. . . .	13
310	. . . .	. . . .	. . . .	. . . .
276	10	27	. . . .	37
305	. . . .	. . . .	. . . .	. . . .
260	10	15	. . . .	50
300	. . . .	. . . .	. . . .	12
300	. . . .	. . . .	. . . .	12
307	5	. . . .	. . . .	5
306	3	. . . .	. . . .	7
300	. . . .	. . . .	. . . .	12
306	. . . .	. . . .	. . . .	. . . .
300	6	. . . .	. . . .	6
306	. . . .	. . . .	. . . .	. . . .
307	. . . .	. . . .	. . . .	. . . .
300	. . . .	. . . .	. . . .	13
309	4	. . . .	. . . .	4
307	6	. . . .	. . . .	6
309	4	. . . .	. . . .	4
305	1	. . . .	. . . .	1
300	. . . .	. . . .	. . . .	12
300	. . . .	. . . .	. . . .	13
300	7	. . . .	. . . .	7
300	. . . .	. . . .	. . . .	7
113	. . . .	200	. . . .	200
273	. . . .	40	. . . .	40
288	. . . .	25	. . . .	25
288	. . . .	. . . .	. . . .	25
311	. . . .	. . . .	. . . .	. . . .
307	. . . .	. . . .	. . . .	6
310	. . . .	. . . .	. . . .	. . . .
306	. . . .	. . . .	. . . .	7
300	. . . .	. . . .	. . . .	13
10,836	73	339	. . . .	661

DAYS IN OPERATION—Continued.

Printing and Publishing.					Printing and Publishing.				
Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.	Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
312					312				
311					298	12			14
312				3	300				
313					313				
311				2	312				
310	4			4	248	2			55
316				1	310				
312					313				
313					312				
312					312				
305					313				
312					310				3
355	10			10	310				
310					312				
305				1	307				
310					313				
313					308				
313					312				
312					312				
313					300				
365					306				7
300					313				
312	5			5	316				
313					306				
313					313				
305				1	309				
365					312				
305					300	5			5
302	4			4	309				4
310					300				7
313					311				
364				1	300				
307	6			6	313				
312					313				
312	3			3	306				
365	2			2	310				3
310				3	306				
310					309				4
312					306				
309					313				
313					290				12
313					312				
310				2	300				12
310					310				3
307					305				7
365					300				
310				3	310				3
251				57	313				
312					311				
300				3	312				
310	2			2	300				7
310					313				
313					310				7
312					306				
310	4			4	313				1
312				1	309				3
300	12			12	309				5

DAYS IN OPERATION—Continued.

Printing and Publishing.

Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
310				
306				
263				50
300				
312				
312				
310				
310				3
313				
310				3
311				
157				156
307				6
308				4
308				
304				5
312				
313				
313				
313				
310				3
300				13
230				80
313				
311				2
42,909	71			617

Morocco.

306				
310	2			2
307				
310				3
306				
309				4
298	1			11
306				
306				
306				
300				7
310				
235		78		78
312				
249				58
300	12			12
310	1			3
272		40		40
307	6			6
253				60
300	5			13
309	2			2
300				12
300	12			12

Morocco.

Number of days in operation during the calendar year.	Number of days stopped for repairs or improvements.	Number of days stopped for lack of orders—slack trade.	Number of days stopped from strikes or lock-outs.	Whole number of days idle during the working year.
307				6
307				6
297	12			12
243	6	60		66
303				10
160				162
8,738	59	178		585

Harness, Trunks, &c.

313				
285				27
300				13
300				12
310				
307				6
308				5
300	13			13
310				
295		14		18
306				
310				
313				
306				
185		100		115
308				
307				6
300				6
308				5
307				6
307				6
307				6
310				3
300		13		13
289	8	16		24
7,491	21	143		284

Brushes.

306				
306				
309	2			4
309				4
300				6
309				
290	15			15
300			2	2
2,429	17		2	31

NUMBER OF PERSONS EMPLOYED IN VA-

The following table is the best result that could be obtained from 7,236 blanks which were sent to employers. In this table is included returns from 2,241 of them. Other returns were made, but were too imperfect to be used. Much time was spent in getting the names of employés and in addressing the blanks, while the postage was nearly three hundred dollars. The blank was made as simple as possible, and yet some manufacturers replied that they did not understand it, and there is no reason for doubting the truth of this statement. In other cases explanations were asked and furnished before the blanks were filled. In a large number of cases the figures were given with an introductory "about" which rendered them worthless for statistical purposes. In not a few cases the returns contained so many round numbers that they bore strong evidence of inaccuracy. These

	Total number of persons employed.	Total number employed for the working year* receiving a man's full wages.
Coal operators—eighty-six returns,	29,004	12,415
One hundred and eighteen additional returns show total number employed and total wages,	31,533	. . . . .
Blast furnaces—thirty-four returns,	4,149	3,473
Forty-one additional returns show totals,	6,831	. . . . .
Foundries and machine shops—one hundred and thirty returns,	17,766	14,230
Sixty-three additional returns show totals,	4,072	. . . . .
Miscellaneous iron—thirty-four returns,	4,190	3,217
Seventeen additional returns, totals,	1,723	. . . . .
Rolling mills and steel works—forty-eight returns,	15,773	11,326
Forty-two additional returns, totals,	15,479	. . . . .
Agricultural implements—eleven returns,	774	581
Ten additional returns, totals,	340	. . . . .
Flint and green glass—ten returns,	1,876	1,137
Seventeen additional returns, totals,	3,930	. . . . .
Clay, products of—sixteen returns,	697	460
Seventeen additional returns, totals,	1,427	. . . . .
Brick—eleven returns,	579	160
Eleven additional returns, totals,	806	. . . . .
Slate—six returns,	407	295
Seventeen additional returns, totals,	1,478	. . . . .
Paper mills—twenty-seven returns,	1,630	898
Thirty-three additional returns, totals,	1,547	. . . . .
Lumber—eighty-two returns,	2,127	1,416
One hundred and twenty-four additional returns, totals,	2,804	. . . . .
Planing mills—sixty-eight returns,	1,646	1,181
Thirty-seven additional returns, totals,	785	. . . . .

* By working year is meant the number of days the mine, furnace mill or other establishment was in operation during the calendar year.

RIOUS INDUSTRIES AND THEIR EARNINGS.

facts clearly show that the blank system of gathering statistics is imperfect, and should be abolished. The results are too meager for the labor and money expended in procuring them. We do not confess to any disappointment over the result; the same thing has happened wherever the blank system is used.

It must be remembered, therefore, in using the statistics here presented, that they are not complete, but do include all the returns made to the bureau which were worth publishing. From these averages of daily or yearly earnings, can be worked out the proportion of full-paid to less than full-paid wage-workers, and other deductions.

Elsewhere in this report will be found very complete and carefully prepared statistics of wages and earnings obtained from a few establishments, which should not be omitted in studying the following table.

Total number employed for less than the working year receiving a man's full wages.	Total number employed receiving less than a man's full wages.	Total amount of wages paid during the year.	Total amount paid to employés for the working year receiving a man's full wages.	Total amount paid to employés for less than the working year receiving a man's full wages.	Total amount paid to employés receiving less than a man's full wages.
10,517	6,072	$13,046,172 56	$6,993,311 95	$4,534,653 82	$1,518,206 79
. . . . .	. . . . .	11,456,770 33	. . . . .	. . . . .	. . . . .
571	105	1,629,370 25	1,582,066 66	29,054 90	18,248 69
. . . . .	. . . . .	3,638,129 44	. . . . .	. . . . .	. . . . .
1,149	2,387	7,388,483 21	6,412,584 84	326,375 23	649,523 14
. . . . .	. . . . .	1,645,980 49	. . . . .	. . . . .	. . . . .
313	660	1,799,816 22	1,540,846 11	91,363 81	167,606 30
. . . . .	. . . . .	856,049 71	. . . . .	. . . . .	. . . . .
2,770	1,677	7,281,977 05	6,257,951 99	543,191 55	480,833 51
. . . . .	. . . . .	7,289,563 60	. . . . .	. . . . .	. . . . .
50	143	292,691 37	246,086 32	15,136 57	31,468 48
. . . . .	. . . . .	157,579 16	. . . . .	. . . . .	. . . . .
100	639	816,290 10	617,554 11	41,912 50	156,823 49
. . . . .	. . . . .	1,880,065 81	. . . . .	. . . . .	. . . . .
114	123	217,962 66	188,578 77	7,206 89	22,177 00
. . . . .	. . . . .	577,423 87	. . . . .	. . . . .	. . . . .
285	134	205,893 58	54,511 71	125,051 47	26,330 40
. . . . .	. . . . .	257,354 00	. . . . .	. . . . .	. . . . .
. . . . .	112	123,510 08	93,156 78	8,000 00	22,353 30
. . . . .	. . . . .	299,357 16	. . . . .	. . . . .	. . . . .
32	700	624,783 39	466,780 34	6,033 86	151,969 19
. . . . .	. . . . .	514,766 52	. . . . .	. . . . .	. . . . .
558	153	659,178 27	512,262 37	118,704 78	28,211 12
. . . . .	. . . . .	822,640 35	. . . . .	. . . . .	. . . . .
229	236	692,223 95	574,744 11	58,242 53	59,237 31
. . . . .	. . . . .	383,022 90	. . . . .	. . . . .	. . . . .

NUMBER OF PERSONS EMPLOYED IN

	Total number of persons employed.	Total number employed for the working year receiving a man's full wages.
Box manufacturers—fifteen returns,	536	143
Twenty-one additional returns, totals,	500	. . . . .
Furniture manufacturers—twenty-two returns,	1,530	1,128
Fifteen additional returns, totals,	376	. . . . .
Musical instruments—four returns,	123	79
One additional return, totals,	15	. . . . .
Carriages and wagons—twenty-nine returns,	459	318
Twenty-five additional returns, totals,	513	. . . . .
Hubs, spokes, &c.—six returns,	256	182
Three additional returns, totals,	54	. . . . .
Boatbuilders—one return,	20	15
One additional return, totals,	25	. . . . .
Brushes—three returns,	45	35
Five additional returns, totals,	69	. . . . .
Tanneries—seventy returns,	2,028	1,626
Seventy-four additional returns, totals,	2,314	. . . . .
Morocco leather—sixteen returns,	765	474
Fourteen additional returns, totals,	859	. . . . .
Boots and shoes—seventeen returns,	1,011	801
Twenty-six additional returns, totals.	1,637	. . . . .
Harness, trunks, &c.—thirteen returns,	88	50
Eleven additional returns, totals,	160	. . . . .
Carpets—thirty-five returns,	2,404	1,247
Thirty-seven additional returns, totals,	2,558	. . . . .
Clothing—thirteen returns,	1,518	377
Twenty-two additional returns, totals,	1,945	. . . . .
Yarns—forty-one returns,	3,297	778
Twenty-four additional returns, totals,	1,987	. . . . .
Woolen goods—twenty-eight returns,	1,947	812
Twenty-four additional returns, totals,	1,080	. . . . .
Cotton goods—thirteen returns,	1,870	559
Eighteen additional returns, totals,	. . . .	. . . . .
Cotton and woolen goods—thirteen returns,	1,274	435
Seventeen additional returns, totals,	3,439	. . . . .
Hosiery and knit goods—twenty-five returns,	3,341	1,031
Thirty-eight additional returns, totals,	3,855	. . . . .
Silk goods—two returns,	403	73
Five additional returns, totals,	1,025	. . . . .
Lace goods—two returns, totals,	350	. . . . .
Shirts, collars, &c.—seven returns,	536	140
Thirteen additional returns, totals,	727	. . . . .
Upholstery—seven returns,	528	190
Fourteen additional returns, totals,	1,577	. . . . .
Coverlets—four returns,	47	31
One additional return, totals,	9	. . . . .
Shoddy goods—five returns,	156	108
Two additional returns, totals,	51	. . . . .
Hats and caps—eleven returns,	318	203
Seven additional returns, totals,	237	. . . . .
Cigars—twenty-nine returns,	1,630	995
Sixteen additional returns, totals,	775	. . . . .
Dyers—ten returns,	505	278
Thirteen additional returns, totals,	499	. . . . .
Breweries—twenty-two returns,	547	386
Eighty-three additional returns, totals,	1,097	. . . . .
Printing and publishing—one hundred returns,	2,087	1,157
Thirty-eight additional returns, totals,	840	. . . . .

VARIOUS INDUSTRIES AND THEIR EARNINGS—Continued.

Total number employed for less than the working year receiving a man's full wages.	Total number employed receiving less than a man's full wages.	Total amount of wages paid during the year.	Total amount paid to employés for the working year receiving a man's full wages.	Total amount paid to employés for less than the working year receiving a man's full wages.	Total amount paid to employés receiving less than a man's full wages.
10	383	142,907 09	79,165 28	3,620 00	60,121 81
. . . . .	. . . . .	76,920 89	. . . . .	. . . . .	. . . . .
26	376	664,173 23	592,072 51	6,550 00	65,550 72
. . . . .	. . . . .	174,490 53	. . . . .	. . . . .	. . . . .
14	30	47,250 00	35,300 00	3,800 00	8,150 00
. . . . .	. . . . .	8,998 00	. . . . .	. . . . .	. . . . .
49	92	207,740 12	182,676 94	7,166 18	17,897 00
. . . . .	. . . . .	242,832 76	. . . . .	. . . . .	. . . . .
42	32	97,625 14	81,198 70	11,828 10	4,598 34
. . . . .	. . . . .	23,450 00	. . . . .	. . . . .	. . . . .
. . . . .	5	6,576 51	5,729 96	. . . . .	846 55
. . . . .	. . . . .	6,800 00	. . . . .	. . . . .	. . . . .
. . . . .	10	17,575 00	14,795 00	. . . . .	2,780 00
. . . . .	. . . . .	27,080 00	. . . . .	. . . . .	. . . . .
292	110	785,160 79	728,793 86	34,918 17	21,448 76
. . . . .	. . . . .	964,721 54	. . . . .	. . . . .	. . . . .
35	256	357,620 69	273,603 75	17,640 00	66,376 94
. . . . .	. . . . .	387,285 08	. . . . .	. . . . .	. . . . .
23	187	360,297 68	312,014 04	7,316 65	40,966 99
. . . . .	. . . . .	599,347 88	. . . . .	. . . . .	. . . . .
4	34	34,500 82	27,155 86	830 50	6,514 46
. . . . .	. . . . .	86,377 00	. . . . .	. . . . .	. . . . .
242	915	837,046 50	557,925 22	65,724 59	213,396 69
. . . . .	. . . . .	1,049,829 51	. . . . .	. . . . .	. . . . .
174	967	387,824 76	170,159 65	20,298 50	197,366 61
. . . . .	. . . . .	540,054 96	. . . . .	. . . . .	. . . . .
77	2,442	983,749 94	402,506 52	18,254 07	562,989 35
. . . . .	. . . . .	622,113 54	. . . . .	. . . . .	. . . . .
46	1,089	659,031 11	433,476 14	7,139 19	218,415 78
. . . . .	. . . . .	267,226 10	. . . . .	. . . . .	. . . . .
. . . . .	1,311	$588,961 07	$267,397 51	. . . . .	$321,563 56
. . . . .	. . . . .	804,121 26	. . . . .	. . . . .	. . . . .
108	731	381,179 74	169,057 42	$41,447 00	170,675 32
. . . . .	. . . . .	1,085,414 95	. . . . .	. . . . .	. . . . .
221	2,089	996,266 91	420,641 08	64,641 39	510,984 44
. . . . .	. . . . .	911,761 79	. . . . .	. . . . .	. . . . .
. . . . .	330	83,853 70	26,449 50	. . . . .	57,404 20
. . . . .	. . . . .	196,956 10	. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	95,000 00	. . . . .	. . . . .	. . . . .
340	56	143,298 00	70,682 00	22,000 00	50,616 00
. . . . .	. . . . .	162,746 00	. . . . .	. . . . .	. . . . .
37	301	155,247 05	91,736 39	10,100 00	53,410 66
. . . . .	. . . . .	359,217 98	. . . . .	. . . . .	. . . . .
5	11	13,030 79	11,086 57	946 92	997 30
. . . . .	. . . . .	1,941 50	. . . . .	. . . . .	. . . . .
. . . . .	48	52,397 81	42,687 81	. . . . .	9,710 00
. . . . .	. . . . .	21,000 00	. . . . .	. . . . .	. . . . .
3	112	132,821 16	111,011 69	400 00	21,409 47
. . . . .	. . . . .	114,646 28	. . . . .	. . . . .	. . . . .
174	461	518,422 34	419,267 52	28,909 64	70,245 18
. . . . .	. . . . .	337,379 52	. . . . .	. . . . .	. . . . .
75	152	219,838 71	159,898 12	28,206 73	31,733 86
. . . . .	. . . . .	247,331 99	. . . . .	. . . . .	. . . . .
117	44	289,952 76	253,598 09	26,539 03	9,815 64
. . . . .	. . . . .	744,426 97	. . . . .	. . . . .	. . . . .
138	792	1,043,914 01	858,378 73	27,297 92	158,237 36
. . . . .	. . . . .	443,928 58	. . . . .	. . . . .	. . . . .

CAMBRIA IRON WORKS. DISTANCE ONE AND A HALF MILES.

THE CAMBRIA IRON COMPANY.

It is the intention of this Bureau to publish from year to year historical descriptions of the principal manufacturing establishments of the State. As the iron and steel industry is of vast importance it is proper that this should be first in the series. The Cambria Iron Company has been selected for the reason that the period and character of its operations represent quite fully the various steps of development in this industry.*

The great works now operated by the Cambria Iron Company originated in a few widely separated charcoal furnaces, which were built by pioneer iron workers in the early years of this century. Deposits of carbonate iron ore are found in the mountains of Western Pennsylvania, and as early as 1803, Gen. Arthur St. Clair engaged in the iron business, erecting Hermitage Furnace, about sixteen miles from the present site of Johnstown. In 1809 the working of ores was begun in the vicinity of Johnstown. These were primitive furnaces, where charcoal was the only fuel employed, and the raw material and product were transported entirely on wagons. Feeble as this business was, it marks an important epoch, the beginning of the manufacture of iron in this country, which has grown to wonderful proportions and has filled the new world with wealth.

The Cambria Iron Company was chartered under the general law authorizing the incorporation of iron manufacturing companies, in the year 1852. The purpose was to operate four old-fashioned charcoal furnaces, located in and about Johnstown, some of which had been erected many years before. Johnstown is situated at the foot of the western slope of the Allegheny Mountains, and was then a village of thirteen hundred inhabitants. The Pennsylvania railroad had only been extended thus far in 1852, and the early iron manufacturers rightly foresaw a great future for the industry at this point. Coal, iron and limestone were abundant, and the new railroad would enable them to find ready markets for their products. In 1853 the construction of four coke furnaces was commenced, and it was two years before the first was completed, while some progress was made on the other three.

*This is not intended to be a complete sketch of the company as a manufacturing enterprise, but to show more especially the relations which have existed between the company and its employés; what difficulties, if any, have occurred; the relief given to the sick and otherwise disabled and other facts pertaining to the treatment of the employés of the company.

England was then shipping rails into this country under a low duty, and the iron industry, then in its infancy, was struggling for existence. The furnaces at Johnstown labored under greater difficulties in the years between 1852 and 1861, than can be appreciated at this late day. Had it not been for a few patriotic citizens in Philadelphia, who loaned their credit and means to the failing company, the industrious city of Johnstown, known throughout the country, would probably never have been built. Notwithstanding the protecting care of the Philadelphia merchants, the company in Johnstown was unable to continue in business, and suspended in 1854. Among its heaviest creditors in Philadelphia were Oliver Martin, and Martin, Morrell & Co. The money due these firms was for goods sold to the company, and they were also threatened with the loss of the stock which they had taken in the enterprise. At a meeting of the creditors in Philadelphia soon after the suspension of the company, Daniel J. Morrell, then a young merchant of great shrewdness, was appointed chairman of a committee to visit the works at Johnstown and recommend the best means, if any there were, by which the Philadelphia creditors could realize their investments, and at the same time, if possible, save the company from bankruptcy. The committee visited Johnstown, made a thorough examination of the works, and reported to the Philadelphia creditors. This report was written by Mr. Morrell, as chairman of the committee. In it he strongly urged the Philadelphia creditors to invest more money in the works and continue the business, as the best means of securing the amounts due them, and, at the same time, preserving the life of the company. So great was the faith of the Philadelphians in the judgment of the young merchant that, notwithstanding the gloomy outlook for the iron trade and the past failure of the company, the additional funds recommended in the report were promptly raised, and the company again resumed business. Mr. Matthew Newkirk, a wealthy Philadelphian who had invested largely in both experiments, was made president of the company. Unfortunately this investment succeeded but little better than the first, and in 1855 resulted in another failure. Mr. Morrell never lost faith in the enterprise, and to him, more than to any other influence, is due its present marvelous success. By his great energy and by the faith which his will power inspired in others, he was mainly instrumental in forming a new company and securing new credit. Charles S. Wood, Richard D. Wood, Daniel J. Morrell, Edward Y. Townsend, George Trotter, Matthew Newkirk and others, now organized themselves under the firm name of Wood, Morrell & Co., which leased the Cambria Iron Works for seven years. Mr. Morrell relinquished his home and business interests in Philadelphia, where the future seemed to have in store for him a brilliant career as a merchant, and removed with his family to the mountain village of Johnstown to manage the business of the new firm. The rolling mill, which had been partly constructed,

had a weekly capacity of one hundred and fifty tons of iron rails. Railroad building was then in its infancy, and the builders, accustomed to purchasing rails in England, were inclined to look upon American enterprise in this direction in a very discouraging light. The new management perfected plans for largely extending its works, increasing the capacity, and preparing to supply the American markets with better rails than could be furnished from abroad.

The year of 1856, the first after the lease was made, was one of great financial depression, and the following year was worse. To render the situation still more gloomy, a fire broke out in June, 1857, and in three hours the large mill was a mass of ruins. Men stood in double ranks passing water from the Conemaugh river, three hundred yards distant, with which to fight the flames. So great was the energy, determination and financial ability of the new company, that in one week after the fire the furnaces and rolls were once more in operation under a temporary structure. At this early stage in the manufacturing, the management found it advisable to abandon the original and widely separated charcoal furnaces and depend on newly constructed coke furnaces. As soon as practicable after the fire, a permanent brick mill was erected and the company was once more fully equipped. When the war came and with it the Morrill tariff of 1861, a broader field was opened up. Industry and activity in business became general; new life was infused into every enterprise. In 1862 the lease by which the company had been successfully operated for seven years, expired, and by a reorganization the present company was formed.

A new era in the manufacture of iron and steel was now about to dawn upon the American people. In the year 1870 there were 49,757 tons of steel produced in the United States, while in 1880, the production was 1,058,314 tons. It may be interesting to state here that in Pennsylvania in 1870, the production of steel was 35,306 tons, while in 1880 it was 590,686 tons. It will be seen, therefore, that our State kept pace with the industry in its marvelous strides, producing in each of the years of 1870 and 1880, more than one-half of all the steel made in this country. From an infant industry in the United States the manufacture of steel, struggling for existence, as it had been for a century past, suddenly became the greatest of our industries, and astonished the world by its magnitude. Open-hearth steel, crucible steel, and blister steel, prior to this had been the principle products, but were manufactured by processes too slow and too expensive to take the place of iron. The durability of steel over iron, particularly for rails, had long been known, but its cost of production prevented its use. In 1857, one steel rail was sent to Derby, England, and laid down on the Midland Railroad, at a place where the travel was so great that iron rails then in use had to be renewed sometimes as often as once in three months. In June, 1873, after sixteen years

of use, the rail, being well worn, was taken out. During its time 1,250,000 trains, not to speak of the detached engines, &c., had passed over it. This was the first steel rail, now called Bessemer rail, ever used.

The great awakening in the steel industry so briefly outlined above, was due mainly to the successful operation of what is known and used throughout the world as the Bessemer process for manufacturing steel. Sir Henry Bessemer, to whom is currently ascribed the honor of inventing the process which bears his name, is a native of London, born in 1813. He was by birth a mechanic and by profession a civil engineer. In 1854 Mr. Bessemer was experimenting in the manufacture of iron from which to mould a large gun. As is the case in many chemical discoveries, this one dawned upon him suddenly and doubtless without his being specially in pursuit of it. The process itself is very simple; so much so indeed that one wonders why, for centuries in the manufacture of iron and steel, it should remain a hidden secret to man. Briefly, it consists in blowing cold air into the converter, a pear-shaped vessel, which has been partly filled with molten cast iron. By this operation the oxygen of the air, forced through the hot iron, produces the most intense heat known, eliminates from the molten mass the carbon and silicon it contains, and produces decarbonized and desiliconized iron, known generally as malleable iron. Some carbon, however, is required to produce steel, and a definite quantity, in the form of spiegeleisen, is then added to the material in the converter. The spiegeleisen introduced furnishes the necessary amount of carbon to produce steel, while it also drives out the oxygen that has remained after the blast of cold air has ceased. In this way Bessemer or pneumatic steel is produced. The present success of this invention, however, was not brought about entirely by Mr. Bessemer. Without the assistance of Mr. Goran Frederick Goransson, a Swedish gentleman then experimenting in the same line, and particularly that of Mr. Robert F. Mushet, of England, Mr. Bessemer's invention, unless he could have greatly perfected it, would have been of little practical value. Mr. Bessemer is, however, entitled solely to the invention of the ingenious machinery by which the discovery is now so wonderfully applied. In both Europe and America the steel made by this process is of such a quality that it is used for every purpose, unless, indeed it be for the manufacture of very fine cutlery.

This great invention has an American history which is not generally as well-known as its English history. In 1857–58, Mr. William Kelly, late of Louisville, Kentucky, made, at the Cambria Iron Company's works, the first experiment in this country in the manufacture of pneumatic steel. The vessel which he used is carefully preserved as a relic by the company. There is little doubt that Kelly preceded Bessemer in the discovery, but the latter, having the appliances more

perfected than the American inventor, obtained the patents and enjoys most of the honors and emoluments of the discovery. In May, 1863, however, the Kelly Process Company was organized, the Cambria Iron Company and Mr. Morrell individually, being interested in it, and was successful in making steel under the patents awarded to Mr. Kelly over Bessemer by the Commissioner of Patents. In 1864, the control of Mr. Bessemer's process and patents for the United States was obtained by Messrs. Winslow, Griswold and Holley, of Troy, New York. A conflict arose immediately between these two companies, the rival owners of the patents, which threatened extensive litigation, and prevented either company from prosecuting the business or extending the industry until the controversy was settled. Finally Mr. Morrell obtained full authority from the Kelly Process Company, and in 1866 succeeded in effecting a consolidation of all the interests of both companies. By this stroke of policy, protracted litigation was avoided. Through Mr. Morrell's advice, though much to the dissatisfaction of some of the parties in the company, the royalty for the use of the joint patents was reduced from the enormous figure at which it was held prior to the consolidation of the interests. But the good results proved to all parties, the wisdom of the suggestion, the owners or claimants of the patents and the users of the process being mutually benefited by the consolidation of the interests, and the reduction of the royalty. "Had it not been for Mr. Morrell," writes a prominent iron master, "several years of the steel industry, now so well established, would have been lost to the country."

In a large sense the new steel industry must be regarded as of American origin. The discovery was first made by Kelly, and priority was awarded to him by the Patent Office. The American engineers, Holley, John and George Fritz, W. R. Jones, Hunt and others, re-arranged and improved the Bessemer machinery and steel plant, and the apparatus for manipulating the product. The American workmen by their superior energy, intelligence and good management, got five times the product made in the same time, and with substantially the same converters used by English workmen. Furnished in this way with steel rails, at a price which otherwise would have been almost prohibitory, and of a guaranteed quality, the American railroad companies extended their lines, perfected their road-beds, increased the speed of their trains and doubled, trebled and quadrupled the weight of their engines and capacity of their cars, so that this country now enjoys by far the most extensive railroad system in the world and at a very low cost.

The years following the close of the war brought about an unprecedented revival in railroad building. In 1864 there were but 33,908 miles of railroad in the United States, while in 1874, there were 72,741 miles, the milage being more than doubled in ten years. The annual increase of mileage which had fallen to 738, in 1864, increased year by year until the upward movement culminated in

an increase of 7,379 miles in 1871. The American railroad companies were quick to perceive the superiority of steel rails which Bessemer's process had brought into use in England. The great demand in America for English rails, led English manufactures to ask fabulous prices for their product. Though manufactured then as cheaply in England as now, the American projectors of railroads were compelled to pay as much as one hundred and seventy dollars per ton for steel rails. Home production therefore, became a necessity, and recognizing this, Congress imposed a duty of twenty-eight dollars per ton on foreign rails. This encourgement to the American manufacturer, concurring with the settlements of the controversy respecting the Bessemer-Kelly patents and the reduction of royalties under them, brought about a rapid extension of the business. The Cambria Iron Company commenced the erection of Bessemer works in 1869, and sold its first steel rails in 1871, at the ruling price of one hundred and four dollars per ton. Other enterprises rapidly followed. The history of the company from this point shows a constant increase of plant as required by a daily expansion of business. Moreover, constant changes and renewals have occurred, indeed, it is estimated that every iron and steel plant that keeps abreast of the times must be virtually renewed in twenty years. Among other things may be noted the perfecting by the Cambria Iron Company of the three-high rolling-mill, patented by John and George Fritz, and also the entire revolution in steel manufacture, resulting from the invention by George Fritz of the steel-blooming mill. Prior to his invention and its perfection by this Company, steel ingots were universally reduced by the slow and costly process of hammering. Mr. Fritz demonstrated that they could be as well and more profitably rolled, and his mill has come into general use throughout the iron world.

Description of the Works.

About ten years ago, the Cambria Iron Company arranged with Dr. J. H. Gautier & Sons, of Jersey City, to organize a limited partnership association under the name of "The Gautier Steel Company, Limited," to manufacture at Johnstown, wire and various other forms of merchant steel. Within less than a mile from the main works extensive mills were erected and the business soon grew to great proportions. In a few years so much additional capital was required, owing to the rapidly increasing business, that Dr. Gautier, then far advanced in life, wished to be relieved of the cares and duties incident to the growing trade, and the Cambria Iron Company became the purchaser of his works. "The Gautier Steel Company, Limited," went out of existence and the works are now known as the "Gautier Steel Department of Cambria Iron Company."

The blast furnaces, steel works and rolling mills of the company are situated upon what was originally a river flat, where the valley of

the Conemaugh expanded somewhat just below the borough of Johnstown, and now forming part of Millville borough. The arrangement of the works has been necessarily governed by the fact that they have gradually expanded from the original rolling-mill and four old style blast furnaces to their present character and capacity of which some idea may be obtained by the condensed description given in the note below.*

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*The Johnstown furnaces, Nos. 1, 2, 3 and 4 form one complete plant, with stacks seventy-five feet high, sixteen feet diameter of bosh. Steam is generated in forty boilers, fired by furnace gas, for eight vertical direct-acting blowing engines.

The blast is heated in twelve Whitwell stoves and the smoke is carried off from stoves by two smoke-stacks, ten feet inside diameter, two hundred and thirty-two feet high.

The trestles for unloading stock are located on a level about sixty-five feet above bottom of furnaces; there are six lines each twelve hundred feet in length. The stock is carried to the charging platform on trucks by inclined planes. Metal from the furnaces can either be poured directly into ladles resting on trucks and run to the Bessemer works or cast into pig. The cinder is run into cinder cars while liquid. In the front and rear and on the sides of the casting-house are tracks for the removal of iron and cinder.

Nos. 5 and 6 blast furnaces form together a second plant with stacks seventy-five feet high, nineteen feet diameter of bosh. No. 5 has iron hot blast stoves and No. 6 has four Whitwell fire-brick hot blast stoves. The furnaces have together six blowing engines exactly like those at Nos. 1, 2, 3 and 4 furnaces. The engines are supplied with steam by thirty-two cylinder boilers.

Conemaugh furnace is worked in the production of spiegel and is thirteen feet six inches in diameter of bosh and sixty-five feet high. The blast is heated in iron stoves. The boilers and engines are of ordinary types.

The Bessemer plant was the sixth started in the United States (July, 1871). The main building is one hundred and two feet in width by one hundred and sixty-five feet in length. The cupolas are six in number. Blast is supplied from eight Baker rotary pressure blowers driven by engines sixteen inches by twenty-four inches, at one hundred and ten revolutions per minute. The cupolas are located on either side of the main trough, into which they are tapped, and down which the melted metal is directed into a ten-ton ladle set on a hydraulic weighing platform, where it is stored until the converters are ready to receive it. There are two vessels of eight and a half tons capacity each, the products being distributed by a hydraulic ladle crane. The vessels are blown by three engines. There are two Worthington compound pressure pumps connected with accumulators in the converting blooming and open hearth departments, so that the pressure is constant and regular.

The Bessemer works are supplied with steam by a battery of twenty-one tubular boilers. The best average, although not the very highest work done in the Bessemer department, is one hundred and three heats of eight and a half tons each for each twenty-four hours. The best weekly record reached 4,847 tons of ingots, and the best monthly record 20,304 tons. Best daily output, 900 tons ingots. All grades of steel are made in the converters from the softest wire and bridge stock to spring stock. All the special stock, that is other than rails, is carefully analyzed by heats, and the physical properties determined by a tension test. From the knowledge thus obtained the use to which it is to be applied is determined. The laboratory for physical tests has a lever testing machine of capacity of one hundred thousand pounds, and an emery machine of three hundred thousand pounds capacity, and other apparatus of approved type.

The open hearth building, one hundred and twenty feet in width by one hundred and fifty-five feet in length, contains three Pernot revolving hearth furnaces of fifteen tons capacity each, supplied with natural gas. A separate pit with a hydraulic ladle crane of twenty tons capacity is located in front of each pan, with hydraulic

In 1874 a six weeks' strike occurred among the employés of the Cambria Iron Company, and it is remarkable, indeed, that this is the only one of any significance known in its history. The cause was traced to a secret labor organization, which had been introduced in violation of a rule adopted by the Quaker management when the company was organized, that employés desiring to connect themselves with any secret labor organization would be expected first to

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cranes for the ingots. A steam crane of twenty-five tons capacity is also in use for special purposes.

One of these furnaces is now operated on the Krupp dephosphorization process. The pig iron for this is melted in two cupolas, and run into the revolving furnace. Metal of the greater purity necessary for special steels is made from this dephosphorized pig.

The 40-inch blooming train for blooming 20-inch ingots is driven by a reversing engine with two cylinders 40 inches diameter, 48-inch stroke and is geared to the two-high train three to one.

The ingots weigh sixty-five hundred pounds each, and are rolled into 7-inch blooms, each ingot making eight to ten rails. Siemens heating furnaces, eight in number, are used; they are supplied with natural gas.

The new blooming train is 48 inches, two-high, driven by a pair of horizontal reversing engines, 44-inch cylinders, 60-inch stroke, geared two to one to the train. Both blooming trains are served by twenty-five-ton cranes for changing rolls, pinions, etc., besides the hydraulic cranes for handling ingots. A Sellers, 4-ton, and Candie 5-ton steam hammer are located conveniently near the trains. Hydraulic pressure is maintained by a Worthington compound duplex pump, connected with accumulators, giving 350 pounds pressure to the square inch. The products of the 40-inch train for the past year, reached two hundred and forty thousand tons of ingots bloomed. Steam for the blooming mill and open-hearth plants is generated in twenty-nine tubular boilers.

The rolling mill is 85 to 100 feet in width by 1,900 feet in length; contains a 24-inch train number one, of two stands of three-high rolls, provided with manipulating tables for handling the blooms, and with a ten-ton traveling crane for changing rolls. Hydraulic pressure for working the tables is maintained by a compound duplex pump, connected with an accumulator giving 300 pounds pressure. Stock for the mill is heated in ten furnaces. The mill is worked on steel rails which are passed by machinery from the rolls to the hot saws, there cut to length and passed through a rail-cambering machine to the four cooling beds located on both sides, where they are distributed to the cold-straightening machines in a shed adjoining. This cold finishing shed is an iron frame 100 feet in width by 240 in length, and contains drills and straightening presses.

No. 2 train is twenty-one inches, and has three stands of three-high rolls. This mill has nine heating furnaces, is worked on light rails of double length (sixty feet), angles and other steel shapes. The sawing, cambering and distributing are accomplished as before described.

No. 3 train is twenty-one inches, with three stands of three-high rolls. It is worked on various kinds of billets, being supplied by six heating furnaces.

No. 4 is twenty-one inches, similar to the others. The stock is heated in six heating furnaces, and is rolled into round and other shapes. Condensers are used on all the engines driving the trains.

The 16-inch mill of three stands of two-high rolls is used for making various kinds of merchant iron.

The 12-inch train has three stands of three-high rolls. It is used for splice bars, light angles, track bolt iron and sixteen to twenty-four pound rails.

The puddle mill, which at one time was a large department, has now but four puddling furnaces worked with the old train upon scrap.

The wire-rod mill can take a billet two inches square and roll it into a No. 5 wire-

retire from its service. So little tendency has there been towards strikes, and so justly and considerately have the employés of this company been treated, that even during the strikes and riots of 1877 there was no breath of discontent, and controversies about wages have not since disturbed the operations of the company.

In the fall of 1886 natural gas was introduced into the works, and

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rod in twelve passes. The product of the mill is eighty thousand pounds per turn. When one end of a piece is in the roughing rolls, the other end is on the reel, and the immediate parts of the piece are in the various grooves of the train. The roughing and finishing rolls stand in line, but are independent of each other and are driven by separate engines. The billets are heated by natural gas in a Siemens furnace. The engines are supplied with steam by eight tubular boilers.

In a portion of the mill building, originally used as a puddle mill, is located the bolt and nut works, wherein are made track bolts and machine bolts. This department is equipped with bolt-heading and nut-making machines, cutting, tapping and facing machines, and produces about one thousand kegs of finished track bolts, of two hundred pounds each, per month, besides machine bolts.

Near this, also, is located the axle and forging shops, in the old puddle mill building. The axle shop has three steam hammers to forge and ten machines to cut off, center and turn axles. The capacity of this shop is 100 finished steel axles per day. All axles are toughened and annealed by a patented process, giving the strongest axle possible.

In the forging plant, located in the same building, there is an 18,000 pound Bement hammer, and a 10-ton traveling crane to convey forgings from the furnaces to the hammer. There are two furnaces for heating large ingots and blooms for forgings.

A ventilating fan supplies fresh air to the mills through pipes located overhead, and having outlets near the heating furnaces. One hundred thousand cubic feet of fresh air per minute is distributed throughout the mills.

The mill has in addition to its boilers, over the heating furnaces, a brick and iron building, located near the rail mill, 205 feet long and 45 feet wide, containing twenty-four tubular boilers, aggregating about two thousand horse power.

The "Gautier Steel Department" consists of a brick building 200 feet by 500 feet, where the wire is annealed, drawn and finished; a brick warehouse 373 feet by 43 feet; many shops, offices, etc.; the barb wire mill, 50 feet by 256 feet, where the celebrated Cambria Link barb wire is made; and the main merchant mill, 725 feet by 250 feet. These mills produce wire, shafting, springs, plow shares, rake and harrow teeth and other kinds of agricultural implement steel. In 1887 they produced 50,000 tons of this material, which was marketed mainly in the Western States.

Grouped with the principal mills thus described are the foundries, pattern and other shops, drafting offices, time offices, &c., all structures being of a firm and substantial character. This description might be indefinitely expanded, but care has been taken to include in it only the principal structures and more important machinery so as to give a good, general idea of the works.

The company operates about thirty-five miles of railroad tracks, employing in this service twenty-four locomotives, and it owns fifteen hundred cars.

To the large bodies of mountain land connected with the old charcoal furnaces additions have been made of ores and coking coals, and the company now owns in fee simple 51,423 acres of mineral land. It has in the Connellsville district, five hundred acres of coal in fee simple, and a leasehold of a thousand acres, where it has erected six hundred bee-hive coke ovens, which will afford a coke supply from this field for the next thirty years. The coal producing capacity of the mines in Pennsylvania, owned by the company, is 815,000 tons per year.

The supply of Bessemer ores is drawn mainly from the Menominee region, in Michigan, where the company controls extensive mines, a considerable portion, however, being obtained from its mines on the eastern side of the mountain in Blair county.

into the city of Johnstown generally. This is brought from the Westmoreland fields, the Grapeville region, by a pipe line forty miles in length, with a diameter of ten inches at the well, which increases to twelve, sixteen and twenty inches as it nears Johnstown. Gas is delivered at the works at about eighteen pounds pressure, and there reduced for consumption to a pressure varying from one-half to one and a half pounds, as is required. The pipes throughout the works are overhead, to avoid danger from leakage into underground sewers. The pressure of the gas in the various systems or lines is regulated automatically and kept constant, so that the combustion is almost uniform.

Daniel J. Morrell.

During all these years of prosperity over which the reader has gone in the history of the company, years which saw the increase from a simple experiment to its present gigantic proportions, the moving spirit was Daniel J. Morrell. A description of the Cambria Iron Company would be incomplete without a reference to his life and character.

The story of his youth has been told a thousand times in the history of American enterprise. His childhood and youth were attended with such vicissitudes as were experienced by most boys who were reared in the early homes of this country. His ancestors were the true American pioneers whose mission in life was to clear away the original forest and make this a great and prosperous country. His entire time spent in school did not exceed two years. In 1837, when in his sixteenth year, Mr. Morrell left home and went to Philadelphia, to which city his elder brother had preceded him. Here he became a clerk for the firm of Trotter, Morrell & Co., of which his elder brother David was a member, engaged in the wholesale dry goods trade. With them he remained five years, when he in partnership with his brother engaged in the same business in the same building, now designated as No. 32 North Fourth street. In 1845 Mr. Morrell became associated in business with Oliver Martin, a dealer in fancy dry goods, the style of the firm being Martin, Morrell & Co. In 1854 Mr. Martin died and Mr. Morrell was made executor of his estate. This with the business of the firm engaged his attention for another year, when he retired from mercantile pursuits, with a small capital, to assume the management of the Cambria Iron Works at Johnstown. There he spent the remainder of his days, and the story of his life is a complete history of the struggle and success of the Cambria Iron Company. Though Mr. Morrell's education in his younger days was very limited, yet by close study and observation he attained in manhood a superior literary education, together with a very wide knowledge of men and matters.

Mr. Morrell not only took great interest in business and politics, but labored with untiring industry to build up and improve the little city

DANIEL J. MORRELL.

in which he lived. Mr. Samuel J. Reeves, one of America's prominent ironmasters, in paying a tribute to Mr. Morrell some years ago, said that "his broad humanity always compelled him to have a constant regard for the individual welfare of the community of which he was the chief and head." Particularly was he interested in assisting the employés of the Cambria Iron Company to purchase homes of their own. His policy and that of the company generally was to advance the money needed, and allow them to pay as much as they were able of their monthly wages until the entire cost of the house was paid. This policy has made Johnstown a city of workingmen's homes, and has given such stability ot its general business, that commercial failures have been comparatively unknown. Mr. Morrell was a member of the borough councils for twenty-seven years, and his best energies were devoted to improving the city.

Anxious to secure employment for the daughters and widows of the employés of the company who were willing to work, its management erected a woolen mill which now employs about three hundred persons. Amusements were not neglected, and the people of Johnstown are indebted to the company for the erection of an opera house, where dramatic entertainments are given.

Mr. Morrell greatly aided the cause of the union during the war, by encouraging in every way, the enlistment of volunteers. Almost every able-bodied employé of the company was at some period of the war, enlisted as a soldier. When the war was over, his acknowledged ability, his patriotism, his intelligent advocacy of the protective policy, and his many sterling qualities of head and heart were recognized by his neighbors, who elected him in 1866, to represent them in the lower house of the National Congress. In his first speech in this body Mr. Morrell uttered the following noble plea for labor.

"The American workingman must live in a house, not a hut; he must wear decent clothes and eat wholesome and nourishing food. He is an integral part of the municipality, the State and the nation; subject to no fetters of class or caste; neither pauper nor peasant, nor serf, but a free American citizen. He has the ballot, and if it were possible, it would be dangerous to degrade him. The country stands pledged to give him education, political power and a higher form of life than foreign nations accord to their laborers, and he must be sustained by higher rates of wages than those of Europe. Our industries operated by American citizens, must be freed from foreign interference and organized into a distinct American system, which will exact some temporary sacrifices, but result in general prosperity and true national independence. In maintaining diversified industries we utilize every talent, provide a field for every capacity, and bind together the whole people in mutual dependence and support, assuring the strength and security of our republic."

The reader will certainly admit that this is a complete outline of the protective policy of this country.

Although a new member of the Fortieth Congress, he was made chairman of the Committee on Manufactures and a member of the Committee on Freedmen's Affairs. He retained the chairmanship of the Committee on Manufactures during the Forty-first Congress to which he was also elected, and was also a member of the Committee of the Pacific Railroad and of the Select Committee on the Decline of American Commerce. To him, too, is due the introduction and passing of the bill to provide for the celebration at Philadelphia of the hundredth anniversary of American Independence.

In January, 1878, Mr. Morrell was appointed a commissioner to the Paris exposition. On May 9, 1878, he sailed for Europe, returning in October. On the 6th of March, 1879, he was elected president of the American Iron and Steel Association. This he held till January 6, 1885. On account of failing health he retired from the management of the Cambria Iron Company January 15, 1884. He died in August, 1885.

Houses and Rents.

The Cambria Iron Company owns about seven hundred houses which are rented exclusively to their employés, and at prices much lower than the regular rents of the city. An influence helping to bring about cheap rents may be the policy of the company outlined above, by which a large proportion of the laboring men of the city own their houses. A list of the applicants for houses is kept, and as rapidly as vacancies occur the applications, in their regular order, are filled. On the ninth day of February, of this year, the agent, who has charge of the rental of houses, reported one hundred and forty-nine applications on file. On the same day the writer, in company with a photographer, had views made of the dwelling houses shown in Figures 1, 2, 3 and 4. The officers of the company were not consulted concerning the houses to be photographed, nor was inquiry made concerning the rent of dwellings until the selections were made. The highest grade of houses was not selected, but those which we thought were fairly representative of the workingmen's homes in Johnstown. Figure No. 1 represents a double house on Washington street each part containing eight rooms, hot and cold water, bath and other modern conveniences, the rent of which is $17.50 per month. Figure No. 2 is a view of houses on Prospect street, which also contain eight rooms, hot and cold water, bath, &c., and rent for $12.60 per month. Figure No. 3 represents another grade of houses on Gautier street, each containing seven rooms, and finished basement and attic, and hydrant water supply, the monthly rent of which is $8.10. Figure No. 4 represents houses on Prospect street, containing four rooms with finished basement, hydrant water supply, &c., and renting for $5.40 per month,

FIG. 1. TENEMENT HOUSE.

FIG. 2. TENEMENT HOUSE.

PHOTOTYPE F.OUTEKUNST PHILAD'A.

FIG. 3. TENEMENT HOUSE.

FIG. 4. TENEMENT HOUSE.

The Cambria Library.

One of the first and most striking objects which will attract the visitor to Johnstown is the Cambria Library building. It was erected by the Cambria Iron Company and, with the ground upon which it stands, is a gift from that company to the people of Johnstown.

The building fronts forty-three and a half feet on Washington street and has a depth of sixty-eight and a half feet. On the first floor there is a large reading room, a smaller reading room for women, an office for the librarian, and a library of six thousand nine hundred and fourteen volumes, consisting of all the standard English classics and the best current literature. The classification and number of books in each class is as follows: Juvenile, 772; science, 647; history and travels, 549; biography and poetry, 401; fiction, 1,668; works of reference, 1,983; miscellaneous, 894.

The library has been for a number of years the selected depository for the publications of the United States Government, and contains a large and exceedingly valuable collection of reports both of the United States and of the State of Pennsylvania. The leading monthly and quarterly magazines, English and American, are subscribed for and all the principal trade papers and technical publications are to be found on file in the reading room. Special attention is given to scientific publications, both popular and technical, and to works of reference in the arts and literature. The reading rooms are free and are much resorted to, especially by the young. There is a second story room extending across the front of the building known as the chess room, but is principally used as a class room and as the meeting place of the Art League. The upper floor is a hall with a capacity for seating about three hundred people, containing blackboards, maps and a piano, and arranged for use as a class room for the teaching of drawing.

The charge to persons taking out books is fifty cents for three months or two dollars a year, this being not quite sufficient to pay the charges for rebinding. Provision is made for the free use of the library by those unable to pay this small charge. A selected list of standard authors and works of reference may be taken out without charge by the teachers and pupils of the public schools. The building was erected and was occupied by the library in 1881, and the value of the ground on which it stands being added to its cost would make this property worth thirty thousand dollars. The title is held by the Cambria Library Association, a corporation which was chartered for this purpose. The association has an endowment fund subscribed by members of the company and invested in stocks, bonds and land, of the aggregate value of forty-four thousand dollars. Of the income from this fund about twelve hundred dollars are absorbed in paying the salaries of attendants, light, fuel and incidental expenses, and a like amount is appropriated annually for the purchase of books and periodi-

cals and for the educational work carried on during the winter season.

The system of instruction or educational work was organized in the winter of 1881–82 and has been kept up ever since. Teachers are employed to instruct free classes in mechanical drawing, free-hand drawing, mining, mathematics and chemistry, and voluntary instruction is regularly given to classes in geology and political economy. The general manager of the company, Mr. John Fulton, contemplates an experiment in this direction that will be watched with great interest. He proposes that young men who desire to specially educate themselves shall work three days in the mills and devote the other three days of each week to study, under the instruction referred to above. The sessions of the Cambria Scientific Institute are held in the large hall of the library every Saturday evening during the winter season. The exercises consist on alternate evenings of lectures and the answering of questions referred to different sections. The Art League, an organization of young women, uses the small hall for its meetings and gives one or more public entertainments in the large hall each season. The library classes have generally been well attended, and the class in geology and mining, taught by Mr. John Fulton, formerly a general mining engineer, has graduated one or more mine inspectors and a number of mine bosses and fire bosses, while the pupils of the class in mechanical drawing have found places in the drafting offices of the works. The Scientific Institute admits freely all fit persons to membership. Its meetings, which are always of interest, attract quite a number of young men and boys who are availing themselves of the advantages of the library in obtaining an education. It has tended to popularize the library, and its influence is causing a demand for a better class of fiction and the use of scientific and technical works. Mr. Morrell served as president of the library until disabled by illness, when he was succeeded by Mr. Cyrus Elder.

Cambria Mutual Benefit Association.

This association was organized on August 6, 1883, to supply the place of the Cambria Mills Relief Society, which had been forced to dissolve in April, 1883, on account of its inability to pay to its members the benefits guaranteed by its constitution. The last named society had existed for about six years. It had started with a membership of about one thousand six hundred, each of whom, by the constitution, was bound to pay twenty-five cents per month as dues, and in return were to receive five dollars per week in case of disability caused by accident or sickness. The amount thus received being inadequate to the demand, the monthly dues were subsequently increased to fifty cents, the benefits remaining the same. In addition to this, on the death of a member there was also to be paid to his representatives, the sum of twenty-five dollars for funeral expenses. The Cambria Iron

Library Building. Exterior.

Library Building. Interior.

Company had likewise paid into the treasury of this society a sum equal to fifty cents per year for each member, but the income was still insufficient to meet the demands of the society.

The Cambria Mutual Benefit Association was therefore organized, on the following basis: The members meet in the various departments of the works on the last Saturday of October of each year and elect one person for each one hundred members or fraction thereof as a member of the general committee. On the first Saturday of November of each year this committee elects five persons on the part of the association, who, with four persons appointed by the Cambria Iron Company, constitute the board of directors of the association. This board transacts the business of the association, awards benefits, approves applications for membership, &c. The board meets on the first and third Mondays of each month, and orders for the payment of benefits are approved at these meetings.

Members of the association are classed with respect to dues as follows: The first general class consists of members not over forty-five years of age, who pay monthly dues of thirty cents each, and are entitled to receive benefits of three dollars per week for disability caused by accident or sickness and thirty dollars for funeral expenses in case of death.

The second general class is composed of those not over forty-five years of age, who pay monthly dues of forty cents each, and are entitled to receive four dollars per week for disability caused by accident or sickness, and to forty dollars for funeral expenses at death.

The third general class is composed of members not over forty-five years of age, who pay monthly dues of fifty cents each, and are entitled to receive five dollars per week for disability caused by accident or sickness, and forty dollars for funeral expenses in case of death.

Employés above the age of forty-five years are admitted to any of the above classes by paying twenty-five cents per month in addition to the monthly dues.

The special class is subdivded into two additional sections. Section first consists of shop-hands, clerks, women employed in factories, outside laborers, &c., who pay monthly dues of seventy-five cents each. Section second consists of all other employés in and about the mills, mines and works, who pay one dollar per month as dues. Employés in either section of this special class above the age of forty-five years are charged twenty cents per month additional. The benefits are, five dollars per week for disability caused by accident or sickness; fifty dollars for funeral expenses in case of death resulting from disease; five hundred dollars in case of loss of hand or foot by accident while at work, or in going to or returning from the same; two hundred dollars in case of the loss of an eye, or one thousand dollars in case of total blindness resulting from accident while at work; one thousand dollars in case of death caused by accident while at work,

or in going to or returning from the same, provided, that such death or loss of member or members shall occur within four months from the time that the injury is sustained.

The Cambria Iron Company supplies office room and clerical services without cost to the association, and acts as treasurer for it. It also contributes an annual gratuity or donation to the association equal to one dollar for each member entitled to benefits during the entire year, and guarantees the payment of all benefits to the members by an advance or loan to the association, from time to time, of such sums as may be needed.

The employé exercises his own judgment as to whether he will become a member of the association or not, but when he joins the association he executes a release to the Cambria Iron Company of all actions for damages resulting by accident to him while he retains his membership.

A statement of the financial condition of the association and of the amounts disbursed by it each year since its organization, is given below. By this the reader will observe that it distributes about thirty thousand dollars per year.

Receipts.

	Aug. 6, 1873, to Oct. 3, 1884.	Year ending Oct. 31, 1885.	Year ending Oct. 31, 1886.	Year ending Oct. 31, 1887.	Total.
Due from members,	$16,693 08	$20,131 61	$24,315 60	$26,072 81	$87,213 10
Donations from Cambria Iron Company,	1,931 82	2,329 16	2,823 00	2,927 84	10,061 82
					$97,274 92

Disbursements.

Amount paid for weekly benefits for accidents,	$7,285 54	$9,828 77	$12,000 34	$12,759 37	$41,874 02
Amount paid for weekly benefits for sickness,	5,023 75	6,936 67	7,705 28	7,574 38	27,240 08
Amount paid for amputation of limbs,	2,000 00	.....	500 00	.....	2,500 00
Amount paid for loss of eye,	.....	.....	.....	200 00	200 00
Amount paid for accidental death benefits,	2,000 00	2,000 00	3,000 00	5,200 00	12,200 00
Amount paid for burial fees,	960 50	1,088 50	1,100 00	1,149 25	4,343 25
Amount paid for physicians' services, etc.,	25 00	27 00	48 75	67 00	167 75
					$88,525 10

The present membership of the association is about 3,300, and is increasing every month. Its popularity among the employés is shown by the fact that only thirty members have withdrawn their names since the organization in 1883.

The dues paid by the members have never been sufficient to pay the benefits, the deficit being paid by the company. The secretary of the association, appointed and paid by the company, Mr. Thomas Matthews, was a workman in the mill for many years.

The Cambria Hospital.

Under the control of the board of directors of this association is the Cambria Hospital. For some years past it had been the intention of the Cambria Iron Company to found a hospital in which they could, to a better advantage, administer medical treatment to the sick and injured employés. This scheme was especially advocated by the company surgeon. The need of such an institution may be better understood when it is stated that the company surgeon treated 731 employés in the year ending November 1, 1887. The project was urged before the State Legislature of 1885 and a bill was passed authorizing the payment of $15,000 from the State treasury for the purpose of erecting a hospital at Johnstown, the Cambria Iron Company agreeing to subscribe a like sum and also voluntarily proposing to open the hospital to the general public. The bill, however, did not meet with executive approval and was accordingly vetoed by His Excellency Governor Pattison. In 1886 the company showed its honesty of purpose in the matter by subscribing the entire amount necessary and erecting the hospital.

It is situated in the northern part of the city on what is known as Prospect Hill. This place was selected with a view of obtaining the best location possible, for sanitary surroundings, drainage and southern exposure. The main building is a frame structure. Itis heated with steam and lighted with gas. It contains two vestibules, two corridors, an office, operating room, isolating room, ward rooms, a dining room, pantry, kitchen, steward's room, bath rooms, retiring rooms, &c. In front of the main entrance facing the south is a small veranda; leading from this through two large doors, the visitor passes into the first vestibule of the building. From this two doors open, one to the right into the office, the other to the left, into the operating room. The office is also used as a reception room. It is supplied with book-cases containing books, magazines and papers intended for the use of the patients. The operating room is large, well lighted, well heated and well furnished. In this all operations of the hospital are performed according to the latest antiseptic methods. It is equipped with an entire outfit of antiseptic instruments, appliances and means of modern surgery.

From the first vestibule the visitor passes through folding doors into the corridor which leads through the centre of the main building. The first door on the right of this corridor leads into the isolating ward, an apartment intended for patients afflicted with contagious diseases, if such should break out among the inmates. On the other side of the corridor is the dining room, kitchen, pantry, &c. On the left is the linen room which is so arranged that when the linens are properly placed on the shelves they are all exposed to the air. At this point the corridor turns to the right. On the left is the bath room supplied with a large porcelain-lined bath tub, with wash stands, &c.

Here the corridor ends in the second vestibule, which is the means of entrance to the general ward room of the hospital. There are in this, two rows of beds, one on each side of the room, with a window on each side of the beds. The bedsteds are of iron, the bedding of fine hair mattresses, sheeting, blankets, &c. Under the head of each bed is a ventilating shaft leading up the side of the wall into a chimney. In the center of the ward is a large chimney with two open grate fire-places on opposite sides. The ward is furnished entirely with modern furniture. At the end of the ward is a convalescent veranda with a southern exposure, and having glass sides so arranged that they can be removed during warm weather.

One of the peculiar features of this hospital, is that all the rooms have asphaltum floors. In the corridor is a large water plug, which is intended to flood the floors when necessary from a sanitary point of view, and to be also used in cases of fire. The plumbing is entirely exposed, so that it can be readily examined in case of leakage or defect. All sewer traps have ventilating shafts. Every room in the building has an open fire-place.

Back of the hospital is the laundry, a two-story building, the second story containing rooms for the hospital servants. The boiler-house, from which the hospital is heated, is far removed from the other buildings, so that there may be no danger from that source in case of fire.

Club House and Store.

The Cambria Club House is a very neat pressed-brick building on the corner of Main and Federal streets. It was first opened in 1881, and is used exclusively for the entertainment of the guests of the company and such of their employés as can be accommodated.

The store building occupied by Wood, Morrell & Co., limited, is a four-story brick structure on Washington street, with three large store rooms on the first floor, the remainder of the building being used for various forms of merchandise. This branch of the business has been for many years under the supervision of a general manager. The fact that many citizens of Johnstown who are not in any way connected with the company purchase their goods almost entirely at this store is evidence of its well-deserved reputation for fair dealing. A few months ago the company proposed to its employés to turn over all its business to them to be managed on a purely co-operative plan. The offer was in every way a liberal one and might under ordinary circumstances have been accepted. But judging from its present popularity, the employés may have been wise in concluding that the present management, with superior business skill, could manage the store better than they, and in accordingly declining the proposition. Six months before the passage of the present law compelling corporations, firms, &c., to do so, the Cambria Iron Company

FIG. 6. HOSPITAL-WARD.

FIG. 7. OPERATING-ROOM.

began paying its employés twice each month. They are paid in cash and are at liberty to do as they choose with their wages.

Johnstown is built in a deep, level cutting at the junction of Stony creek and Little Conemaugh river, which unite at this place to form the Conemaugh river, just as the Monongahela and Allegheny rivers unite at Pittsburgh to form the Ohio river. The slopes of the hills surrounding Johnstown have been cut through the coal measures of the lower five principal seams of coal, which are covered with a valuable bed of carbonated iron ore. Including the surrounding boroughs, Curnville, Morrellville and Cambria city, all of which are built up solidly to Johnstown proper, the population is about 30,000. The Cambria Iron Company employs, in Johnstown, about 7,500 people, which would certainly indicate a population of not less than 20,000 depending upon the company for a livelihood.

A large proportion of the population of Johnstown are citizens of foreign birth, or their immediate descendants. Those of German, Irish, Welsh and English birth or extraction predominate, with a few Swedes and Frenchmen. As a rule the working people and their families are well dressed and orderly; in this they are above the average. Most of the older workmen of the company, owing largely to its liberal policy, own their houses, and many of them have houses for rent. An inquiry at the banks of Johnstown disclosed the fact that large numbers of the workmen are depositors, an unfailing evidence of thrift and prosperity.

Works of Henry Disston & Sons.

THE KEYSTONE SAW, TOOL, STEEL AND FILE WORKS.

This is one of the most interesting and instructive industrial enterprises in Pennsylvania. Here is a fine exhibition of the inventor's skill; machinery which has greatly economized mental and muscular effort, contributed to the health and happiness of the operative, and producing an article of better quality, while lessening its cost to the consumer.

Mr. Henry Disston, the founder of this enterprise, was an Englishman who came to Philadelphia in 1833, when he was fourteen years old. Seeing an advertisement in a newspaper that an apprentice was wanted by a sawmaker, he applied for the position. The advertisers were two Englishmen, Charles and William Johnson, who were then engaged in making hand-saws. Successful in his application, Disston began his apprenticeship.

At this time only hand-saws were made here, and not many of these. The Johnsons employed but few men, and the industry was, indeed, an infant. Its possibilities, however, were great; and it is Mr. Disston's glory to have been their discoverer and converter into actualities.

Having finished his apprenticeship, Mr. Disston determined to embark on the perilous sea of making saws for himself. He well knew the nature of the hazard. American saws had no reputation. Nearly every American manufacture has encountered the same difficulty. Doubtless the objection of inferior quality has been correctly raised to many American manufactures, and this was true with respect to saws. Mr. Disston, though, determined to make a product quite equal to the foreign, his rigid adherence to this determination bore its proper fruit, for after establishing the reputation of his saws the demand for them rapidly grew, and a great fortune was acquired.

He began in a small basement in the vicinity of Second and Arch streets, Philadelphia. The only skilled laborer was himself; and his assistants were a few boys. How great were the possibilities of this enterprise! Did Mr. Disston, daring, hopeful and far-sighted, see the Tacony of the future? It is not our purpose to give a complete history of its growth, but only to describe the chief improvements, especially those which relate to the economizing of labor and the earnings of the employed.

Let us start with the producing of the steel from which saws are made. When Mr. Disston began, all the steel was imported from

England, to which country the scraps were returned for further use in steel making. This seemed to him a costly use of material. If steel could not be made here from iron, at least the scraps of steel could be made over. This was the first thing attempted in the way of making steel. Afterward, the process was extended to the conversion of iron. The need of making it was great, for so long as he depended on other makers he was not sure of getting the quantity and quality desired. Various grades are used in different kinds of saws, and by producing it himself he could always have these. So the manufacture of steel was attempted. The iron is imported from Sweden, which is converted into steel of fine quality. The success of his saws is due in no small degree to the excellence of the material used. It may be added that the company soon intend to try American iron for making the cheaper kinds of saws.

The steel is cast into ingots which are slightly hammered and then rolled into sheets of varying thickness for the different kinds of saws. These for the purpose of the present description may be divided into three kinds: first, the saw having a straight edge or essentially so, like the most generally used hand-saw, or the older saw used in saw-mills. This was the oldest form, the kind used by Noah, if any, in preparing the materials for the ark. Next may be mentioned the circular or revolving saw; and lastly the band saw which runs on pulleys and which is constantly cutting when in operation, like the circular saw.

Having produced the steel, as above described, the sheets are cut into proper sizes, after which they pass through the toothing process. When Mr. Disston began, a workman thus employed used a hand press and at most could not finish over two dozen an hour. With the aid of a machine, he can cut or punch the teeth of twenty-five dozen in the same time. One of the most interesting machines in this department is for toothing a rip-saw, which are largest at the handle end and gradually diminish in size to the other. Until quite recently a workman beginning at the larger end would cut a number of teeth of uniform size, and then several others of a slightly smaller size, and so on until reaching the other end. At last a machine has been perfected which, beginning at the larger end cuts the teeth of uniformly decreasing size until reaching the other. The process is perfect.

Another important process is the grinding of saws to the proper gauge. This, in the beginning, was a costly process, and also an unhealthy one. It was impossible to prevent the water from flying over the operative, and notwithstanding every precaution he could not keep dry, the floor under him was water-soaked and the room itself was very damp. In grinding cutlery, the grinder suffered far more from dust.

Improvements have been made, until now the process is as healthy as any other in the saw manufacture. When Mr. Disston began, the grinder sat astride the stone as one sits when riding a horse,

HARDENING AND TEMPERING DEPARTMENT.

GRINDING DEPARTMENT.

and the reader can easily imagine what saw-grinding was to the operative so long as the process was conducted in that manner. Occasionally a stone would burst and injure the operative. Besides, the quality of the work is much improved. It is quite impossible to grind a saw or other article as evenly by hand as by machinery. It has been calculated that this machine saves at least three-fourths of the labor formerly required in the process, while the saving effected in grinding cutlery is much greater. Or to state the saving in another form, a man who could grind five saws of a certain kind and size in a day can now grind twenty of them by using machinery. With respect to circular saws, formerly the grinding of a sixty-inch saw was a day's task for two men, while now one man with a saw-grinding machine can grind six saws of the same kind and size.

Another noteworthy improvement is in tempering the saw. During all the earlier operations the saw is soft, can be easily bent, and possesses no elastic property. In hardening, the saw is heated until it is cherry red, then it is immersed in a preparation of oil and beeswax. The saw has now become very hare or brittle, and can be as easily broken as a piece of glass. The spring or temper must now be put into it, and this mysterious property is imparted to the metal by placing it between two heavy dies heated to the proper degree, which are set together by hydraulic pressure. While in such embrace, the saws are flattened, thus doing the work which was formerly done by a smither and which was both slow and expensive. The heat in all of these furnaces is carefully regulated to produce the results desired, and which is far more effectively done than it was in the early days of saw-making. These several processes of tempering, with the aid of machinery, it is calculated, save four-fifths of the work formerly done by men.

Something however remains to be done by men in the way of hammering down any inequalities that remain. This process requires considerable skill, and a large number are thus employed in "smithing." As there are thirty-one processes in making a saw, of course the description here given is not complete. It is not intended to be. One object has been to give an account of the more important improvements which have economized the use of labor, and rendered the manufacture more healthful and agreeable. As stated at the outset our purpose is to deal more with the human, than the mechanical side of this enterprise.

Two or three other mechanical improvements however should be briefly mentioned before leaving this part of our subject. One of these relates to the insertion of artificial teeth, instead of forming them from the plate or disc itself. It may be remembered in passing that this kind of saw is purely an American invention, Benjamin Cummins hammering out the first one on his anvil near Amsterdam, New York, in about 1790. The advantages of the inserted teeth are

that the plate itself can be used for any length of time, and that whenever a tooth is broken another can be put in its place in a minute or two. For persons not especially skilled in sharpening a circular saw, this kind has been gladly welcomed. Improvements in the form of the tooth and in the mode of inserting it have been numerous, and have given birth to a goodly crop of lawsuits for alleged infringements. During one of these trials, before Judge Deady of Oregon, when the nature of the Spaulding improvement, as it was called, was the subject of contention, he quoted the remarks of Judge Grier concerning the luckless fate of inventors, which is in strong contrast with his fate to-day. Said Judge Grier: "When genuine and patient perseverance have at length succeeded, in spite of sneers and scoffs, in perfecting some valuable invention or discovery, how seldom is it followed by reward. Envy robs him of the honor, while speculators, swindlers and pirates rob him of the profits. Every unsuccessful experimenter, who did or did not come very near making a discovery, claims it. Every one who can invent an improvement, or vary its form, claims a right to pirate the original discovery. We need not summon Morse, Blanchard, or Woodworth, to prove that this is the usual history of each great discovery or invention." That was before the patenting of the Bell telephone.

A glance may be taken into the file works where one thousand dozen per day is the usual product. Formerly all the steel thus used was imported, but none has been for many years. Mr. Disston began cutting files about thirty years ago. A good workman could cut four dozen a day while with the machine now in use he can cut nine times that quantity. Rasp files are yet cut by hand, and great skill is required to cut them with accuracy and rapidity. They are tempered by heating them in molten lead and then plunging them into water.

The question is now in order how have the workmen regarded these improvements. Of late much has been said concerning the effect of machinery in displacing labor. Many years ago, and especially in Great Britain, the introduction of labor-saving machinery was regarded with disfavor by the working class. They regarded such machinery as their enemy. In more than one case they destroyed the newly-introduced machine. None of Mr. Disston's workmen ever destroyed a machine, but no improvement has ever been regarded with favor. When the steam hammer was introduced for hammering the billets they were especially angry at the intruder. Dangerous and unhealthful as was the old mode of saw-grinding, the grinders saw worse consequences to themselves if machinery were used for performing the operation.

Were these fears well-grounded? Happily they were not. The use of labor-saving health-improving machinery has not proved detrimental in any way to them. On the contrary the number required has been steadily increasing, while the saving in health from using

better machinery has never been questioned. The task has been enormously lightened. It is easier for a man to direct a steam hammer than to use the hammer himself. It is easier for men to control the machinery for smithing than to do the work themselves. The same remark may be made of every process, and especially of grinding No wonder, then, that the men, as we have been told on the highest authority, would not have the machinery taken out and return to the more difficult and exhausting processes formerly practiced in saw making.

But lest some reader should apply this judgment too widely with respect to the effect of using labor saving machinery, it may be added that saw making was a peculiarly favorable business for applying labor-saving machinery to all concerned. Our country was new and the use for this implement in preparing lumber and in building has been enormous. Consequently, the demand for saws has increased so rapidly that, notwithstanding the labor economized in making them, it has been needful to increase the number of workmen. This has not been the consequence of introducing every machine from the beginning. It is true that in consequence of the growth in population, and especially of cheapening the product from using such machinery, after a few months or years the demand has been increased, and in the end much, if not all, the labor at first displaced has been recalled.

How have their wages been effected by these improvements? Have they been diminished? The following table is the answer.

	Wage Per Day.			
	1887.	1882.	1877.	1872.
Machinist,	$2 75	$2 50	$2 50	$2 33⅓
Machinist (specialties),	3 00	2 75	2 75	2 75
Long saw smither,	2 66⅔	2 50	2 25	2 00
Long saw grinder,	2 50	2 25	2 25	2 00
Hand saw smither,	2 50	2 50	2 33⅓	2 33⅓
Hand saw hammerman,	2 75	2 50	2 33⅓	2 33⅓
Circular saw grinder,	2 75	2 50	2 25	2 50
Long saw toother,	2 50	2 16⅔	2 16⅔	2 00
Hardener,	2 66⅔	2 16⅔	2 00	2 00
Circular saw smither (large),	3 50	3 50	3 50	3 50
Circular saw smither (small),	3 25	3 25	3 35	3 00
Circular saw toother,	2 66⅔	2 50	2 33⅓	2 50
Setting and sharpening,	2 75	2 50	2 00	2 00
Hand saw grinder,	2 50	2 50	2 50	2 50
Carpenter,	2 80	2 25	2 00	2 50
Laborer,	1 50	1 25	1 50	1 50
Hand saw glazer,	3 00	2 50	2 50	2 25
Hand saw rubber,	2 25	2 25	2 25	2 00
Hand saw smither,	2 75	2 50	2 33⅓	2 50
Back saw smither,	2 83⅓	2 66⅔	2 33⅓	2 00
File inspector or cutter,	3 00	3 00	3 00	

While wages have been advanced in many cases, or have not much changed, the decline in the price of saws has been very large, as the following table clearly shows:

1870, No. 7 saws, 26 inches, $18 47 per doz.
1875, " " 14 96 "
1880, " " 13 32 "
1885, " " 12 31 "
1888, " " 11 55 "

1870, No. 6 wood saw blades, $5 00 per doz.
1875, " " 4 50 "
1880, " " 4 15 "
1885, " " 3 70 "
1888, " " 3 50 "

1870, No. 4 back saws, 10 inches, $11 54 per doz.
1875, " " 11 20 "
1880, " " 9 33 "
1885, " " 8 63 "
1888, " " 8 08 "

1870, 54-inch circular saw, $84 00 each.
1875, " " 63 00 "
1880, " " 55 00 "
1885, " " 44 55 "
1888, " " 44 55 "

1870, 60-inch circular saw, $147 00 each.
1875, " " 105 00 "
1880, " " 88 00 "
1885, " " 64 60 "
1888, " " 64 60 "

1870, first quality cross-cut saw, 65 cents per foot.
1875, " " 51 "
1880, " " 34 "
1885, " " 28½ "
1888, " " 27½ "

1870, second quality cross-cut saw, 45 cents per foot.
1875, second quality cross-cut saw, 40 cents per foot.
1880, second quality cross-cut saw, 30 cents per foot.
1885, second quality cross-cut saw, 25 cents per foot.
1888. second quality cross-cut saw, 20 cents per foot.

These changes, though, were not made suddenly. An eminent scientist has said that "no great discovery flashes upon the world at once, and therefore Pope's lines on Newton are only a poetic fancy:

> "Nature and nature's laws lay hid in night;
> God said, 'Let Newton be,' and all was light."

Through years of thinking and experimenting, attended often with heavy expense and frequent failure, did Mr. Disston succeed in perfecting the manufacture of this important article. Covering the period of nearly fifty years, combining the skill of many men, the little acorn planted in the basement of a house in Philadelphia, has developed into one of the goodliest and most useful industrial trees that flourish in our country.

Three years after engaging in this enterprise he removed his place of business to the south side of Arch street above Second, and remained there until 1846. At this time there were several sawmakers who tried to find a market for their goods, but none seemed to understand the superiority of the English article to their own. Mr. Disston clearly understood wherein the English makers excelled, and from the beginning he thought less of the profits than of the quality of his manufactures. An illustration of the fact is worth giving. A hardware merchant, who had patronized Mr. Disston from the first, relates that that on one occasion, when he had brought some saws to deliver, he took one from the handle to show its temper, and discovered that it was too soft. Mr. Disston requested the aid of a boy to help him in putting all the saws back into his wagon. The merchant remarked that perhaps some of the saws were all right, but he said no, they had all been tempered at the same time, and he could not run the risk. This action, considering his pressing need of cash on him at that time, shows how extremely careful he was of his reputation.

It is said that long after his works had grown to vast size, and

KEYSTONE STREET. CORNER WASHINGTON AVENUE.

LONGSHORE STREET.

Tulip Street. Corner of Tyson Street.

Knorr Street.

PHOTOTYPE · GUTEKUNST. PHILADA.

and many things required his attention, he retained personal supervision over the more important processess, especially that of tempering.

In 1849 his works were burned. Another factory was erected, and success began to smile on him. His business rapidly expanded for the reputation of his wares had become strongly established; but in 1864 a second fire devoured his works. His sales had now increased to $400,000 a year. The worst effect of the fire was to delay the sending of goods two weeks, for at the end of that time his works were buzzing, though in rude quarters, while new buildings were in progress.

When these were completed their capacity was more than doubled, and at the close of the civil war all of the departments were full of ordered work. Notwithstanding their capacity, the necessity for further enlargement became apparent. As no more ground could be obtained except at excessive figures, Mr. Disston determined to remove to Tacony, which is eight miles from the City Hall. Several land purchases were made aggregating three hundred and ninety acres. It lies on both sides of the Pennsylvania railroad and extends to the Delaware river, thus commanding ample wharfage. Forty acres have been reserved for manufacturing purposes, which have been about half covered with buildings. These include the steel and rolling mills, circular and long saw departments, the file works, forging shop, pattern shop, hardening and tempering departments, shops for making saw handles, wood saw department, engine and boiler houses, stock and steel warerooms, gas plant and other structures.

Mr. Disston always had a true interest in his employés, and was especially desirous that, so far as possible, they should become house owners. Accordingly, a considerable portion of the land purchased by him was laid out into streets and building lots, which were sold on easy terms. In other words, he was ready to grant any asssistance needful to accomplish that end. Advances were made for building houses; in other cases houses were built and sold to them, and payments were made at such times as were easiest to the buyer. An objection often made to thus buying houses and paying for them by instalments is, that too often adversity overtakes the workman; the mill closes or works only a part of the time; his income is lessened; he has no surplus to apply on his debt; and, what is worse, he may be discharged and obliged to find work elsewhere, and to sacrifice all or a large portion of his interest in his house. Mr. Disston, however, made the original terms so easy, and so modified them afterward whenever unfavoring circumstances to the owner required, that not a single instance has ever happened of his sacrificing his house. Sales have been made from time to time, usually to buy larger ones, and the experiment of providing healthful and tasteful homes at Tacony for workingmen has been highly successful.

The engravings here given convey some idea of the houses. The streets have been wisely planned, and are properly sewered. The

natural drainage of the place is excellent, and the mortality is low. The water supply is from the Delaware, which is of good quality.

Many of the houses, however, were built and rented by Mr. Disston, or by his sons, who have succeeded him. The following table of rents shows what the workmen pay for the different kinds of houses. The higher priced ones are built in pairs, with grounds and light in front and on the side.

Table of Rents.

10	5-room	frame	house,*	.....	$7 00	11	5-room	brick house, bath, gas.....	11 00
12	5-room	brick	"	.....	8 00	49	5 "	" "	11 00
25	5 "	"	"	.....	8 50	8	8 "	" " "	12 00
12	5 "	"	"	.....	9 00	8	7 "	" " bath, gas,.....	14 00
18	5-room	frame	"	.....	9 50	16	8 "	" " "	14 50
7	5-room	brick	"	.....	10 00	12	6 "	" " "	15 00
6	5 "	"	"	.....	9 50	4	9 "	" " "	18 00
8	7 "	"	"	bath, gas,.....	9 50				
14	8 "	"	"	.....	10 00	220			

*All have hydrants and gas.

In 1873 a building association was started, which is both convenient and safe for investing the surplus earnings of the workmen, and also for obtaining the means to buy homes. In the fourteenth annual statement, for the year ending November 30th, 1887, the following figures were presented:

Cash Received.

Balance in treasury November 30, 1886, ...	$3,355 94
Dues, interest, premiums and fines, ..	45,968 81
Re-payment of loans, ...	19,900 00
Initiation fees, ...	147 00
	$69,371 76

Assets.

Bonds, mortgages and stock security loans, ...	$114,200 00
Unpaid dues, &., ...	2,071 00
Fire proof, seal and stationery, ...	400 00
Balance in treasury, ...	2,137 13
	$118,808 13

Cash Paid.

Loans to stockholders, ...	$49,500 00
Stock matured, ...	800 00
Stock withdrawn, ...	16,260 58
Secretary's salary, ...	385 63
Assistant at dues' meeting, ...	7 20
Amended charter and authority to increase capital stock, ...	122 50
Receipt books and copies of constitution and by-laws.....	78 00
Printing and stationery,.....	28 50
Room rent,.....	25 00
Incidental expenses,.....	27 21
Balance subject to order,.....	2,137 13
	$79,371 75

Liabilities.

Dues and accrued profits on 3,790 Shares, ...	$116,097 99
Due on advance payments, ...	295 00
Due on forfeited stock, ...	7 25
Unexpended initiation fees,.....	125 84
Reserve for contingencies,.....	2,282 05
	$118,808 13

On the 16th of March, 1878, Mr. Disston died. The *Public Ledger* described the leading characteristics of his life with much felicity.

"Although the great establishment founded by Henry Disston will continue to occupy the front rank it has won among the workshops of the world, it is still a serious loss to Philadelphia that he is no longer among her living citizens. * * Henry Disston was a born mechanic in the comprehensive meaning of the term; he had the faculty of observing wherein a familiar tool or implement or machine was defective, the genius to devise the means to improve it, and the handicraft skill to do the manual work necessary to carry his own device into effect. He had other qualities quite as essential to the great me-

Hamilton Street.

Tulip Street.

MARSDEN STREET.

MUSIC HALL AND DISSTON LIBRARY.

PHOTOTYPE F. GUTEKUNST PHILA'A

chanic, he was industrious, hopeful and persevering, confident that superiority of workmanship must win success, confident that he could turn out superior work, and resolute in his endeavor to make his tools the best of their kind. He had one other priceless quality, he was not above doing with his hands any of the labor incident to his trade. Without these qualities, and some others not named, such as frugality and patience in his early struggles, the little basement near Second and Arch streets, where he was master, journeyman, apprentice, laborer and salesman, all in one, would never have bloomed and fruited into the well known works at Front and Laurel streets. They were the open secrets of the success of Henry Disston, that made his career one of inestimable use and value to his townsmen, and of great credit to his country. What a volume of that instruction, that teaches by example, there is for the young mechanic in that brief recital of the qualities that made Henry Disston successful, famous and prosperous; that made him an invaluable member of the community in which he lived and broadly useful to the world at large.

"We have spoken of Mr. Disston individually, apart from the associates and partners gathered about him as a nucleus, as his house grew in importance. Doubtless he had the aid in recent times of many a quick eye, ingenious mind, and skilled hand, for he was the sort of man to attract these, and to train them up; but his was the devising and moving power, the creating and impelling force. When he came to the close of his self-imposed apprenticeship, the saw manufacture, especially in this country was crude, a very few varieties of implements and none of them of superior quality being made, to do service in all kinds of work. Under his guidance the manufacture grew into a refined system and he leaves it almost an art. For every special service a saw was required to do in the advanced work of modern mechanics, he devised and furnished the special saw exactly fitted to its working duty, so handy, so well adapted, so completely finished, that workmen wondered they had never been supplied with such obviously essential tools before.

"The production of such work will go on, now that he has passed away, just as it did while he was living, for he has given the impulse, shown the way, and lighted the track a long way into the future. It is among the providences that the impulses given by such men do not cease when their hands are stilled by death.

"It is among the most honorable things to the memory of Mr. Disston, that he had the unwavering good-will of his workmen and that they had in him a friend as well as employer, always devoted to their welfare, always interested in their comfort, health and happiness, always ready with his kindly word of cheer and encouragement. They knew that the prosperity of the Disston Works meant good wages for them, and that no proposition for reduction would ever come to them, unless he was under the compulsion of strict necessity. These things, it

may be repeated, are the most honorable to his memory and are of a nature to add to the deep public regret for his loss by death, in what might have been the prime vigor of his years."

Such was the summary of a journal that knew him well, and which doubtless accorded with that of the thousands who read this utterance and were acquainted with Mr. Disston. His sons, Hamilton, Albert H. and Horace C. succeeded him. Since then, Albert has died, and William and Jacob S. have been admitted into the company.

The inquiry is not without interest, whence were workmen obtained for saw making? To a great extent they began as apprentices. Here the old-fashioned system of apprenticeship, which was so thorough in its methods, has always prevailed. When boys begin their art, they are seventeen years old, and their term of apprenticeship lasts for four years. At present, there are fifty-five apprentices. Formerly, a written agreement was signed by both parties, but the company has been somewhat remiss in this regard until recently. Now, the old practice of having the conditions of apprenticeship in writing has been resumed, and a copy of the agreement usually made is given in the note below.* From this the reader will learn on what terms appren-

* I, John Smith, being seventeen years of age, the fourth day of June, A. D. 1888, with the consent and entire approbation of my father, George Smith, hereby given and duly signified, in hereafter signing this contract, for and on behalf of said John Smith, having determined to learn the art, trade or mystery of setting and sharpening under the instructions of Henry Disston & Sons, Incorporated.

I now agree and am hereby bound to serve Henry Disston & Sons, Incorporated, of Philadelphia, for the space of four years, from and after the fourth day of June, A. D. 1888. The said Henry Disston & Sons, Incorporated, hereby agree to allow the said John Smith for his services the sum of four dollars per week during the first year; the sum of four and one-half dollars per week during the second year; the sum of five dollars per week during the third year; the sum of five and one-half dollars per week during the fourth year, if the said John Smith shall so long remain in their employ, for the purpose aforesaid; it being expressly understood and agreed that the said Henry Disston & Sons, Incorporated, may at any time, at their pleasure, discharge the said John Smith from their employ.

It is hereby agreed by all the parties hereafter signing this contract, that one dollar per week, of the allowance hereinbefore stated, may be retained by the said Henry Disston & Sons, Incorporated, out of the weekly allowance for the first and second years, until the said John Smith shall have completed his term of service under this contract, when it shall be paid to the said John Smith with lawful interest thereon, computed from the time that six months of the proportion of the weekly allowance retained shall accumulate in the hands of said Henry Disston & Sons, Incorporated. And in case the said Henry Disston & Sons, Incorporated, shall discharge the said John Smith from their employ and terminate this contract thereby, the said sum retained with its interest shall be paid to the said John Smith at the time of such discharge; but in case the said John Smith shall refuse to complete the terms of service according to this contract, or shall become disobedient to the said Henry Disston & Sons, Incorporated, or be guilty of any crime or misdemeanor, then and in such case, the amount of said allowance retained together with its interest shall be wholly forfeited by the said John Smith, and may be retained by the said Henry Disston & Sons, Incorporated, as a compensation to them, for the loss of the said John Smith's future services.

It is further agreed, and the said father, George Smith, hereby duly and fully authorizes the said Henry Disston & Sons, Incorporated, to make payment, of all

Henry Disston

tices are employed. Many of the employés have therefore grown gray in the Disston service. The following table showing the number employed and their length of service, are convincing proof that here, at least, the nomadic system of employing men does not flourish.

3 men,	45 years and over.
11 men,	40 years and over.
13 men,	35 years and over.
16 men,	30 years and over.
30 men,	25 years and over.
88 men,	20 years and over.
101 men,	15 years and over.
166 men,	10 years and over.
148 men,	5 years and over.
576	

Other advantages flow from such continuous employment. Kindlier relations are established between employed and employer; greater confidence prevails; and more respect for each other. A man is something more than a machine or a number. Mr. Disston had a real interest in his men, and so have his successors. Nevertheless, in 1886, a strike occurred, lasting five weeks, and which is worth a fuller description than can be given here. Eighteen months before, the wages of the steel melters had been reduced ten per cent., the company promising to restore them whenever the improvement in trade should justify them in so doing. On the 23d of June, 1886, the steel melters asked for the restoration. There had been some improvement in trade, but not enough to grant the whole advance and a settlement was effected by granting one-half, or five per cent. It was supposed that the matter had been satisfactorily adjusted, but the moulders and pullers-out, as they are called, and who are closely associated with the steel melters in their work, were dissatisfied, and they precipitated the strike. The company assured the men that they were paying higher wages than any other steel makers, and offered to pay the expense of a committee of three, two representing the men, and the third man the company, to investigate the assertion for themselves and thus verify the fact. This seemed to be a reasonable proposition, and so thought many of the men, but the proposition was rejected. The proposition was parried with the counter statement that the company's steel was manufactured in a different manner from that made elsewhere, and consequently no comparison could fairly be made. To this the company replied that the statement was not correct; that steel was made elsewhere in the same mode as at Tacony. It is worthy of

said weekly sums and the amount retained, to the said John Smith, and his receipt shall be a full acquittance to said Henry Disston & Sons, Incorporated. In witness whereof the said parties have hereunto set their hands this fourth day of June, A. D. 1888. Witness present, George White, John Black.

Henry Disston & Sons, Incorporated,
Hamilton Disston, *President.*
George Smith.
John Smith.

note that the demands of the strikers were not regarded reasonable by all the employés for on the 8th of October, at a meeting held by them the following preamble and resolutions were adopted:

Whereas, A number of our fellow-workmen, without just cause, have left the employ of Henry Disston & Sons; and Whereas, it is believed by some people that these men represent and express the sentiments of the entire employes of the Keystone Saw, Tool, Steel and File Works; and Whereas, we know this is not so, and feel that our employers have done all that can consistently be asked or expected of them, to adjust the difficulty, therefore, we have considered it advisable to have this meeting to express our feelings, as a continuance of the present state of affairs means unnecessary loss to all, and suffering to innocent men and their families.

Resolved, That their refusal to accept the proposition of the firm to pay the "steel workers" the highest rate of wages paid by any other manufacturers by the piece, or in day work, to pay the highest rate of wages paid for the same class and character of work, and not to charge for spoiled work, meets with our disapproval and we take this means of expressing it, and of withdrawing from them our moral support.

Resolved, Whilst we regret the action of our fellow-workmen, we assure the firm of our sympathy and support, also our willingness to work so long as there is any to do.

Resolved, That we testify to the interest the firm has always shown in our welfare; the courtesy with which all reasonable requests have been received, and the prompt and satisfactory manner in which they have been adjusted when properly presented.

Resolved, That a committee of ten be appointed to notify the firm of our action.

In the end, however, such an investigation was made, the assertions of the company were proved to be correct, and at a special meeting of the sawmakers, who were Knights of Labor, the following resolutions were adopted:

"*Whereas*, It is deemed but fair, in view of the recent strike, that the attitude of the firm of Henry Disston & Sons towards their employés, should be given to the Knights of Labor and the public generally; and whereas the arbitration committee of the rolling mill and melting department unanimously report; we find the schedule of prices as paid and still in force at said works to be considerably higher than the prices paid by any steel manufacturing establishment in Pittsburgh, and there was no just cause for the recent strike in that department;" therefore, be it

Resolved, That it is our duty as fair men to state to all Knights of Labor and the general public that the recent strike in the works of Henry Disston & Sons, as far as the demands of the men of the rolling and melting department is concerned, is unjust; and that we, the sawmakers, having gone out in the support of the melters and rollers,

which we are bound to do, cheerfully state that the demand was not justified by the facts; and further, be it

Resolved, that the fullest publicity be given through the newspapers and through the numerous channels of our order.

So ended the only strike worth mentioning in the long history of this enterprise. On two other occasions a slight agitation arose among some of the men which lasted for a day or two, but did not harden into a strike.

Among the evidences of regard for their employés is the care taken of them when unable to work in consequence of sickness, accident or other cause. Free beds for them have been provided in several of the hospitals of Philadelphia. One is in the Presbyterian Hospital, another in the Protestant Episcopal Church Hospital, and a third in the Hospital for Incurables, under the control of the University of Pennsylvania. Fifteen thousand dollars have been given for these beds, while a further contribution of one hundred dollars annually has been given to the Jewish Hospital since 1877, and a similar amount to the German Hospital, in order to provide as fully as possible for the needs of the employés of the company.

The following table of additional assistance rendered by the company in the last ten years may be fittingly added:

AMOUNT CONTRIBUTED.	1878.	1879.	1880.	1881.	1882.	1883.
Cash paid "funeral expenses," in full,	$88 15	$143 35		$229 27	$75 40	
Cash contributed to help defray "funeral expenses,"		20 00	$79 00	50 00	15 00	$10 00
Contributions in "cash,"	30 00	135 00	34 00	171 00	111 50	150 00
"Loans cancelled,"				5 00		
Cash contributed to place employees in "charitable homes,"				250 00		100 00
Cash paid "taxes" on property of deceased employee,						
Cash paid for "medical attendance" to employees hurt at work,					73 00	44 00
Cash paid to "satisfy mortgage" on property of employees,				883 22	387 07	
Contributions in "coal and wood"						16 50
Contributions in "groceries, etc,"						
Contributions "clothing, etc.,"						
"Rents remitted," "estimated,"	50 00	50 00	50 00	50 00	50 00	*60 00
"Interest on mortgages remitted,"						
Total,	$168 15	$343 35	$163 00	$1,638 49	$712 57	$380 50

*Actual.

AMOUNT CONTRIBUTED.	1884.	1885.	1886.	1887.	Total.
Cash paid "funeral expenses," in full,	$41 00				$577 17
Cash contributed to help defray "funeral expenses,"	36 80				211 40
Contributions in "cash,"	66 00	$150 00	$585 00	$2 00	1,434 50
"Loans cancelled,"	18 12	149 95			173 07
Cash contributed to place employees in "charitable homes,"	100 00				450 00
Cash paid "taxes" on property of deceased employee,					
Cash paid for "medical attendance" to employees hurt at work,		53 50	35 61 207 00	35 61 44 00	71 22 421 00
Cash paid to "satisfy mortgage" on property of employees,					1,270 29
Contributions in "coal and wood,"	6 50	44 95	23 86	11 60	102 41
Contributions in "groceries, etc,"	2 75	10 00	4 95		17 70
Contributions "clothing, etc."	8 00	14 00		1 25	23 25
"Rents remitted," "estimated,"	*10 00	*50 00	*100 00	*100 00	570 00
"Interest on mortgages remitted,"			228 00		228 00
Total,	$288 17	$471 90	$1,184 42	$194 46	$5,550 01

Beside such assistance, the employés themselves have an association of their own for the purpose. This was formed in 1877. It is composed entirely of the employés of the company, and has been well conducted. Such organizations are worthy of all possible encouragement. The following table shows the receipts and payments made by the association.

AMOUNT PAID.	1877.	1878.	1879.	1880.	1881.	1882.
Sick benefits,	$570 00	$775 00	$565 00	$755 00	$1,095 00	$1,095 00
Members' funeral benefits,		100 00	200 00	100 00	400 00	100 00
Wife's funeral benefits,	30 00	60 00		90 00	30 00	60 00
Total,	$600 00	$935 00	$765 00	$945 00	$1,525 00	$1,255 00

AMOUNT PAID.	1883.	1884.	1885	1886.	1887.	Total.
Sick benefits,	$1,030 00	$1,135 00	$1,035 00	$1,100 00	$1,045 00	$10 245 00
Members' funeral benefits,	400 00	400 00	200 00	300 00	400 00	2,600 00
Wife's funeral benefits,	120 00				100 00	490 00
Total,	$1,550 00	$1 525 00	$1,285 00	$1,400 00	$1,545 00	$13,335 00

Beside this purely local association, the employés are members of numerous insurance and beneficial associations. As these will be fully described in our next Report, only their names will be mentioned in this place. They are known as the Senate of Sparta, Artisans' Order of Mutual Protection, United Friends, Knights of Mystic Chain, Sons of Temperance, Knights of Friendship, Order of Sons of St. George, and Tacoma Tribe Improved Order of Red Men. There are other mutual insurance societies to which the members contribute by the week or by the year, or associations possessing perhaps a more social character to which the members contribute, chiefly by fixed rules whenever money is needed to pay to members who are sick or otherwise unable to work. Of course. the modes of contribution vary considerably among these associations. It is said that not a few of the employés belong to several of them. Not the least element in their drawing power is the cultivation of the desire for society. This is just as strong among the working class as any other; and their disinclination to migrate when by so doing they could improve their physical and pecuniary condition, and their numerous social organizations, of which those mentioned are fair types or examples, furnish abundant proof.

Not only have the physical needs of their employés been regarded, but also their mental and moral needs. A convenient building has been erected, containing a hall and library, which Mr. Disston at first intended to build himself, but which was built by another, he agreeing to give a fixed sum toward its maintenance. In this building is the library, which contains about two thousand volumes. The reading room is ample in size and well lighted, and is supplied with the best

MEMORIAL CHURCH.

magazines, and mechanical and trade newspapers. There is also a smoking and conversation room, in which, too, games are played. The library has a membership of one hundred and seventy-one, who pay an annual subscription of one dollar. The following brief record is worth adding:

Attendance during 1887,	7,225	Religious,	97
Books taken out,	4,514	Mechanical and educational,	121
Library open evenings,	266	Historical,	81
Contains the following books:		Biographical,	58
United States and State official reports,	169	Fiction,	1,310
Travels,	52		
Poetical works,	43	Total,	1,931

Beside the library are several churches, one of which was built by Mrs. Disston as a memorial church to her husband, who was a Presbyterian. It cost thirty thousand dollars. The other churches in the village are tasteful structures, and Mr. Disston or the company aided liberally in building them. Mr. Disston erected the first school house, which is now used for the police station. The present building used for a school was built by the city.

Thus Mr. Disston and his sons have ever been mindful of all the needs, pecuniary, physical, mental, moral of their workmen and their families. They have tried to deal fairly and kindly by them, to encourage home life and good citizenship. That they have succeeded in an eminent degree cannot be questioned. A visit to this well ordered and healthful village, a peep into the homes of the workingmen, an inspection of the factories, the evident attention to light, air and other sanitary arrangements, the fair treatment which the employed have always received, these things must convince the visitor that at Tacony sure progress has been made in solving "the labor question." Moreover, this has been done without noise or ostentation. Mr. Disston was not a literary man, he neither wrote books nor pamphlets, nor sought the newspaper reporter. But he was a thinker, an actor and more than all, a good man, and he has incarnated at Tacony, the proofs of his good thoughts and works. Let the despairing go there if they wish to revive their hopes concerning the future of the working class. As demonstration is better than theory, study the history of Mr. Disston's enterprise and the vision of a happier time will appear to you.

THE EMPLOYMENT OF LABOR IN THE CONNELLSVILLE COKE REGION.

[The following letter of instruction was sent last October to Mr. Edward B. McCormick, of Greensburg:

First. A brief account of the growth of mining in the Connellsville district, previous to the first general strike; number and extent of mines and ovens; who were employed as miners, nationality and trouble with them, if any, arising from their employment.

Second. The reason for the first general strike; the propositions on one side and the other; the number of men who participated in it; their nationality; the mode and terms of settlement, and its duration. The other general strikes are to be treated in the same manner.

Third. A description and comparison of the methods and difficulties of coke operators outside the Frick Company, and of those under the Frick management. I have been informed that there has been less difficulty in conducting outside operations. I wish to learn whether this is so, and if it is, the reason why, in the same district one large company should have more difficulty in managing their men than other companies. Is the difficulty enhanced in consequence of employing more men, or does it spring from the mingling of nationalities, or from employing men who are disliked by each other, or are the terms of employment more severe?

Fourth. Give the reasons for importing the Hungarians; the efficiency of their work; their mode of life; whether they remain permanently; their striking disposition, &c.

Fifth. What nationality is most inclined to strike, and is any difficulty experienced in the mingling of nationalities in this employment?

Sixth. Have the miners labor organizations? if so who are the leading officers, Irish, Italians, Welsh, and state as fully as you can how much influence the leading workingmen, whether as officers or not, exert over their fellow workmen? Do a few control the rest, or does each man act on his own judgment? Do the men ever break away from their organizations, or discontinue them, or if they do the latter thing, are other organizations formed by them?

Last. Please be very careful about stating impressions and opinions. Give facts whatever they may be without reference to theories, persons, or consequences.

In response to this letter Mr. McCormick has contributed the fol-

lowing carefully prepared account of the development of the coke industry and employment of men in the Connellsville Coke Region.—CHIEF OF BUREAU.]

The Connellsville Coke Region, is the name popularly given to that strip of country about forty miles long by three miles wide, which lies north-east and south-west across Westmoreland county, and part of Fayette. Endowed by nature with rare advantages, it presents in the last ten years of its development, a strange mingling of success and misfortune. In 1876, three thousand men would include every miner, drawer, driver and day laborer connected with the industry in the region, and in the entire forty miles of its length there were not three thousand six hundred ovens. In the decade following, however, the demand for coke had so increased, that in 1887 the Connellsville region had expanded into a vast furnace of thirteen thousand ovens, while the poorly-paid helpless band of workmen of ten years ago, has grown into a vast army of thirteen thousand cokers, the best paid and most independent body of wage-workers* in the State, supporting a population of more than sixty thousand souls.

This coke, manufactured by the simple roasting for a few hours, of soft black coal in a bee-hive oven, because of its high percentage of carbon, freedom from impurities, its hardness and consequent ability to bear heavy burdens in the furnace, has been proven after years of experience, the best fuel of the kind yet discovered; having driven charcoal out of the market as a fuel for the manufacture of pig iron, it is without a rival in the furnaces of the great West; it has regular purchasers among those who smelt gold and silver taken from the Pacific hills, and, except the anthracite coal in Eastern Pennsylvania, is almost without a competitor on the continent.

While all these facts attest the phenomenal growth and prosperity of the coke region, there is another side not so bright, but full of meaning and suggestion to those who will sit down and examine facts.

Since coke was introduced to the commerce of the world in the year 1842, it has had a long struggle with prejudice and fierce competition. The history of the trade is a series of difficulties. When the demand for coke was brisk, there was a great scarcity of cars. The frequent depressions in the iron industry of course have brought disaster to the coke trade, and destinations were wanting when cars abounded. In addition also to the inconveniences and embarrassments of a hastily developed country, there has arisen between the operators and their employés during the last three years, such a lamentable misconception of each others rights, that there has been little else than war since it arose. The beginning of 1888 finds the operators in a disturbed condition, such as brought eighty-five cent coke before the syn-

*Sworn statements before Umpire Jackson in arbitration of 1887, showed the average wages of all the employés (including boys) with the H. C. Frick Coke Company, to be $2.09 each *per diem*. For entire coke region the average was $2.06.

dicate was formed, and that organization itself, which alone made profit in the operating of coke ovens possible, is in a state of discouraging dissolution. On the other hand the great house of cokers is divided against itself. The jealousies of leaders have arrayed the two labor organizations in the coke region against each other in a hopeless war for supremacy. The struggle goes on, all seeming blind to the fact that anything else than a harmonious, united organization, whose leaders are wise and true, with an eye single to the good interests of those they represent, must defeat the very ends that organization is meant to subserve and *has* subserved in giving the coke workers the position they occupy to-day. In an industry of remarkable features, no one is more appalling in its magnitude than the great strikes that have brought misery and financial ruin on several occasions, aggregating to the workingmen alone a loss of one million and a half of dollars. A discription of these strikes will be given after a brief reference to the general character of the coke region and its early development.

So early as 1835, the manufacture of coke began, and the product was used in the smelting of iron at the Fairchance iron furnace of F. H. Oliphant, who took specimens of this iron to the Franklin Institute in Philadelphia. It was also used sometime before at the Meason furnace, near Plum Rock Mill, in Fayette county. Its development in the Connellsville region proper began in 1841, when Messrs. William Turner, Sr., Provance McCormick and James Campbell employed John Taylor, a stone mason, who owned a farm beside the Yough, at the edge of Connellsville, to erect two ovens on the lands now occupied by the Fayette Coke Works. Previous to this, the coke had been made in open ricks by Meason and the Oliphants, but these were the first of the 13,000 "bee-hives" that now dot Fayette and Westmoreland counties. Subsequent to these humble beginnings, other small plants were established by Mordecai Cochran and Richard Brookins, and also by Colonel A. M. Hill, one of the most famous coal operators on the Yough, who bought the Dickerson farm and erected seven ovens, much improved over those before used. The growth however was very slow and difficulties in the way of transportation always impeded it. The stones of these old ovens are long since torn asunder and scattered, the mortar in their old joints has crumbled away and mingled with the earth, but the fire lighted that day with a chink from the blacksmith's forge burns now in thousands of ovens, multiplying millions of capital, and supporting one of the chief of Pennsylvania's excelling industries.

In its topography the lay of the country follows the lay of the coal basins. The coal bed is about fifty miles long and two and a-half miles wide, lying from sixty to one hundred and fifty feet under ground, along its longitudinal axis. As it approaches the Chestnut Ridge to the east, it bends rapidly and then abruptly toward the surface, and crops out along the western slope of the ridge. The coal

toward the northern end is not considered so good as that toward the Yough, where it is much deeper, at Uniontown the surface being a layer of nearly two hundred feet. A recent survey puts the amount of coal yet remaining in the coke region at 70,000 acres. As each acre furnishes 5,000 tons of coke, this region would furnish 350,000,000 tons, which would supply the present output two hundred years. The vein ranges from eight to eleven feet in thickness. This coking coal is soft and porous, yielding easily to the miner's pick. It is comparatively free from sulphur and can be shoveled into the ovens as it comes from the mine, without any preliminary process.

As before stated the development of the coke industry was very meager at first and in fact has acquired nearly all of its commercial importance since 1875. In the midst of the panic as it were, the iron trade was completely prostrated, and during the four years following, up to 1879, there were no ovens built. Clouds settled upon the coke region, but they were not clouds of smoke from burning coal. In the latter part of the year 1879, however, the iron industry was greatly revived and the demand for coke became wonderful. It quickly rose in price. New plants sprang up everywhere, thousands of workmen were employed as rapidly as they came. Operators burned slack upon the ground and sold the product at fancy prices. In one year after the boom came, coke jumped to $5.00 per ton, and there were 8,000 ovens in the region. This was the most prosperous season the trade has ever seen. The prices of coke soon began losing ground under the influences of competition and glutted markets and in 1883 reached bottom at eighty-five cents per ton, many of the operators in the meantime having amassed great wealth.

Let us return for a moment, however, to the boom of '79 to discuss a feature which has since become very important in the coke region. We refer to the employment of Austro-Hungarians as workers about the mines. There has been a great deal of popular misapprehension on this subject. After a thorough investigation we believe the coke operators have been wrongfully charged with the bringing of this nationality to the region for the purpose of breaking strikes and decreasing the wages of the American workman. The Hungarians first came to this region in 1879 when everything was at high tide. Work was plenty and labor was too scarce to supply the demand. An effort was made to secure workmen in the cities, and from New York there came a large number of Germans and Poles, who had been employed in various menial positions. There were also some Hungarians, and these came when no strike was in existence. Word was sent by them to their friends at home and from that time forth they have come in a steady stream. In Hungary, which is a portion of the Austro-Hungarian empire, the average wages per day is about sixty cents and board. There are coal mines along the Carpathian mountains and the miners of that region were infatuated with

the promise of making from two to four dollars a day in this country. At first a few came over to try their fortunes, and these were so gratified at the chance of saving money, that cheering news was sent to their kinsmen at home.

The more provident of them save from $600 to $1,000 with which they either pay off the mortgages held on their property in Hungary by the Jewish, Greek or Armenian creditors, or they buy a tract of ten or fifteen acres in their native country, build a house and become comparatively independent. They aim to possess enough property to place them in the upper class, where they exercise the right of franchise and are recognized as peasant proprietors. Many of the families here have emigrated to the West and bought farms in Michigan, Montana, Texas and other States. Of those who return to Hungary the majority come again to this country, where the great opportunities for making money have taken fast hold of them.

These people are slow to take up the English language, though their children taught in our schools do so readily. More than 65 per cent. of those who come over can read and write the Hungarian language well, some of them being good scholars. They are naturally inoffensive in their character and very respectful in their demeanor. While they can save more of their wages than any other class of laborers in the coke region, unlike the Italians and Chinese, they refuse to work for less wages than other employés. Naturally averse to striking, they are terrible when once they begin it, overleaping all bounds of law and utterly ignoring the rights of life and property.

In their habits of life they are filthy. This is partly due to the force of circumstances, but they seem to be accustomed to it. The writer has seen a dozen of them seated around a table with a soup dish in the center, each one forcing his way in, something after the manner of pigs at a trough. They suspend their meat from an upper window until it partly decomposes and then are said to partake of it with the keenest relish. All in all, aside from their filthy habits of domestic life and their tardiness in becoming Americanized, they will compare favorably with many other nationalities as laborers, civilians and citizens. Many of them, of course, are worthless and drink to excess. A compound of alcohol, rain-water, brown sugar and fine-cut tobacco is said to be to them a delicious draught, known in Hungarian parlance as " polinki."

There is a great diversity of nationality among the employés of the coke region, distributed in about the following proportion: One-sixth, or 2,000, are Huns and Poles, one-sixth, or 2,000, Bohemians and Germans; one-third, or 4,000, are Irish, while one-third, or 4,000, are native and scattering. It is difficult to say which nationality is most inclined to strike, though the Huns have established their claim for being the most destructive.

Strikes in the Region.

Before referring in detail to the strikes in the region the following table is given, showing changes in the the price of mining coal and drawing coke from January, 1877, to December, 1884, when the reduction was made in wages, that lasted until the strike of 1886 :

DATE.	Mining room coal.	Drawing and leveling ovens.
January, 1877,	25 cents per wagon	60 cents per oven
November, 1879,	30 " " "	70 " " "
January, 1880,	35 " " "	80 " " "
June, 1880,	30 " " "	70 " " "
December, 1884,	27 " " "	55 " drawing
		8 " leveling

The following statement is made to show as briefly as possible the strikes in the coke region from March, 1879, to July, 1881, inclusive :

Strike, March, 1879, for 30 cents per wagon and 70 cents per oven ; work resumed about 5th of April, 1879, at the old price. Strike general, but of only a few days length.

Strike, February, 1880, for 40 cents per wagon and 90 cents per oven ; work resumed 20th of February, 1880, at old price, strike lasting but a few days.

Strike, June, 1881, for uniform wagons of $33\frac{1}{3}$ bushels and one cent per bushel, and 10 cents advance per oven for drawing. This is the strike referred to as the first general one in the coke region. The demands of the cokers are presented above. They wanted uniform wagons, and it is admitted on all sides that this demand was proper, as the wagons were not of uniform capacity. Had this demand been granted, much future trouble from this same source would have been avoided.

The miners, however, seem to have selected an inopportune time to strike. The boom was over and the coke trade was dull. The strike began Monday, June 6, 1881, pursuant to notices posted up at the various works the week before. It was a general one, but no one seemed to care much about it. There was no organization among the men and they received but little consideration from the operators, who could well afford to let the plants lie idle in the hot weather of a dull season. There was no violence, and with the exception of evictions from company houses, no trouble, whatever. Those who were evicted formed themselves into camps along the Mt. Pleasant Branch near Everson, and lived pleasantly enough. After a listless lock-out of more than four weeks there was a general break in the ranks, the strike was declared a failure and work was resumed at the old price, making a loss of about twenty-five days. At this time there were 7,000 workmen in the region, and the reports show a shipment of 50,000 tons of coke per week.

Loss of Strike of 1881.

The price of coke was from $1.40 to $1.75 per ton, the average being about $1.50. Assuming that it cost the operators $1.15 to make the coke, there would be, allowing three-fourths of the ovens to be idle during the strike, a loss of $52,500. This should be much greater as there was a general damage to the mines, machinery and various appliances.

Counting on the other side twelve ovens per week at seventy cents, thirty wagons at thirty cents, forking coke at seventy-five cents per car, $1.40 a day for laborers, and $1.60 per day for drivers, track-layers, &c. The average daily wages of each laborer in the coke region is $1.48. The loss for 7,000 men in twenty-five days, allowing three-fourths idle during strike. therefore is $194,250. The grand total to operators and cokers is $246,750. This of course is not taking into consideration the loss to the railroad companies and their employés, which would swell the sum to $275,000, at least.

A slight revival in the coke trade caused the expansion up toward the northern end, and work was begun on the plants in the Youngwood Branch in 1882. Dull times came, however, in the spring of 1883. At some places wages were reduced and many plants were shut down. Idleness, with all its attendant ills, bore severely upon the Hungarian, and he was almost driven away. Meetings were held throughout the coke region and the operators were urged to endeavor to return the Hun to his native land. No action was taken, and a period of dull trade takes us to the latter part of 1884, when a reduction came in wages, as given in the preceding table. For drawing coke sixty to fifty-five cents per oven. Mining, thirty to twenty-seven cents per wagon; forking coke, eighty-five to seventy-five cents per car, and all other wages ten per cent. During the flush times in prices when coke at $5.00 per ton was scarce, and all works were run to their fullest capacity, the miners received thirty-five cents per wagon, and other wages in proportion; Coke came down and in the latter part of 1883, reached bottom at eighty-five cents, but the wages remained almost the same, viz: thirty cents per wagon and sixty cents per oven for drawing. If the miners did not share in the extravagant profits, neither were they called upon to bear the losses of the depressive period, and this reduction was accepted gracefully on all sides.

Organization Among Cokers.

Meanwhile the workingmen in the coke region looked upon the matter of organization favorably. In fact they considered it necessary in order to enable them to receive proper consideration from their employers. Early in 1883, therefore, a movement was started to organize all the workmen in the coke region under the name of the "Miners' Amalgamated Association." W. F. Barclay of Mt. Pleasant, was made president, and a Hungarian named Joseph Neuner was sent to consolidate

his countrymen. Meetings were called and considerable interest was aroused, but the whole scheme collapsed as completely as did Neuner's efforts among the Hungarian contingent, and organization among the cokers did not revive until the spring of 1886.

The Operators Organize.

The above attempts among the toilers of the region to organize were followed by more successful ones on the part of the operators.

During the boom in the coke business every operator found sale for all the coke he could make. When this abnormal condition passed away there came a reaction. The business ran itself out of breath; the fires in many ovens went out, and an army of idlers walked aimlessly about through the region. In June of 1883, the coke trade was exceedingly dull. In fact the price had fallen from $1.75 to less than ninety cents per ton and there can scarcely be a doubt that the works were operated at a loss. Those who operated drift and slope openings could sell their products at a lower price than the others, and it was clear that with this policy continued nothing but disaster to the entire region could follow. Making a virtue of necessity, however, the operators looked forward to better results. A meeting was called in Pittsburgh in the fall of 1883 for the purpose of devising some method whereby the output could be restricted and regulated and better prices thus obtained. John K. Taggart, J. M. Reid, J. R. Stauffer and J. A. Strickler were appointed a committee to confer and arrange for an organization to that end. It was no easy task. The evil effects of the late "war for extermination" loomed up. Every operator looked upon his neighbor with suspicion, and this mutual distrust combined with the difficulty of adjusting interests properly, gave little promise to the project of union. Finally, however, in March 1884, the agitation resulted in the formation of the "Coke Pool," comprising the syndicate, and the producers' association. The former was composed of the H. C. Frick Coke Company with 5,474 ovens; McClure & Co., with 1,146 ovens; Schoonmaker with 780 ovens, and the Connellsville Coke and Iron Company with 764 ovens; the "Coke Producers' Association" included the smaller operators and controlled 1,421 ovens; independent operators aggregated 908 ovens, while there were also operators whose product was used in private furnaces and not thrown upon the market. For the coke pool the syndicate acted as agent and sold the coke for a percentage arranged by a sliding scale for different prices of coke.

The cokers had attempted organization and failed, and there is nothing remarkable in the result, for what could any organization among the miners accomplish with the operators engaged in a pitched battle? This new move, therefore, assuring a firmer foundation and more substantial rewards for the industry, was hailed by all con-

cerned with great delight, a feeling which underwent among the miners a radical change in the strikes that followed.

The syndicate, however, did not prove an "Aladdin's Lamp" at once. Prosperity did not come at its command, and for a year after it was formed the beneficent results looked for failed to materialize. The first part of the year 1885 passed by indifferently, but soon the iron trade began to brace up and the coke operators got in shape to play their hands to better advantage. Slight advances in price were secured and the era of prosperity that came in the fall of that year brought the coke region into a state of full activity, and filled the inhabitants with delight. New ovens were built and the output averaged nearly one thousand cars a day, at from $1.20 to $1.40 per ton.

Hand in hand with the feeling of rejoicing over the brighter prospects came murmurings of dissatisfaction among the cokers. They were faint at first, and the prospects of a strike, under the impoverished condition of the laborers, seemed very remote indeed. The Huns had not been saving money as they longed to do, and it was very easy to convince them that they were being made, with their fellow-laborers, the victims of oppression.

Nothing formal was done toward meetings, but the self-constituted representatives were walking about spreading views antagonistic to the coke operators, and when finally these developed into fruitage, there resulted one of the most stubborn and bitter strikes that has occurred in western Pennsylvania.

The Strike of 1886.

The first public intimation of this strike was given, when the report of an alleged meeting at Scottdale, on Christmas, 1885, found its way into the Pittsburgh papers. This meeting consisted of but two men, one of them William Mullen, who has since become a labor advocate of some prominence. At this time no one seemed to have the idea of asking an increase except the self-constituted delegates. Subsequently, however, the great majority of workmen elected delegates to the conventions. A second meeting on New Year's day was more largely attended by delegates from various parts of the region, representing no particular works, but all heartily unanimous in the opinion that there should be an advance in wages. A general call was then issued for a delegates' convention to meet at Scottdale on the sixteenth day of January, 1886, for the purpose of taking measures to increase their present wages. Circulars were sent over the region and the miners everywhere were electrified. Discussion was rife and when the convention assembled on Saturday, January 16, the hall would scarcely contain the representatives who collected from almost every plant in the region. The general demand in this strike was for an advance of ten per cent. in wages. Around this as a centre, however, there clustered a long list of grievances almost as numerous as the delegates

themselves. The Hungarians demanded ninety cents for one hundred bushels, all coal to be weighed and a check weighman to be put at every tipple where coal was weighed. All other delegates were instructed to simply ask an advance of ten per cent. The committee on resolutions made a report embodying the claims of the Huns, as well as all others that were defined. It was finally decided to demand ten per cent. advance, and this was supplemented by the following resolution:

"*Resolved*, That a delegation be selected from the delegates present to confer with the operators for the purpose of furthering the demands already made, and in the event of a refusal by the operators, to offer arbitration as a mode of settlement."

The reference to arbitration was unfortunate. The temper of the meeting after listening for hours to violent denunciation was not suited to such a proposition and the opponents expressed their views with great emphasis, finally wiping out the arbitration clause and making the resolution to read as follows:

"*Resolved*. That a delegation be elected from the delegates present, to confer with the operators for the purpose of furthering the demands already made. In the event of a refusal by the operators, to strike at once, and in the meantime all who are out to stay out and use all methods in their power to have others join them."

On the evening of the same day a telegram was sent to the coke syndicate in Pittsburgh informing them of the action of the convention and demanding an immediate reply, and this one matter proved a rather important feature in the great strike which followed.

The strike was inaugurated by the Hungarians two days before the convention in Scottdale. On Monday the 18th, it was inaugurated throughout the region and became general at once. The agitation had the effect of arousing very bitter feeling on both sides. The cokers complained that they had been bound by iron-clad leases; that they had been robbed in the company stores; that their rents were too high; that the wagons in the mines were not uniform and held much more than the brand indicated, and finally that the price of coke had advanced with the scale of wages as low as when coke was eighty-five cents per ton.

While many of the demands of the miners were unquestionably just, they were both untimely and unwisely made. Indications were not lacking that there would be a voluntary advance, and a little patience on the part of the men would have realized their hopes without a struggle, thus avoiding the loss of time, the bitterness engendered, and the poverty, suffering and violence that followed. As against the claims of the strikers, the operators contended that they had conducted their coke plants during a part of the time at a loss, and for a long time at no profit. They had now begun to realize a profit and could not advance wages at once. And above all, they claimed they had had no notice of

the demand, and that the men had left their employment without giving them a chance to consider the matter at all, destroying their property and terrorizing those who wished to work.

This was emphatically a Hungarian strike; it was precipitated by a number of Huns, incited by labor agitators. Suiting the action to the exact wording of the Scottdale resolution, they at once began ridding the coke yards of those who desired to work and destroying such tools and other property as they could lay hold of. Officers sent to arrest the leaders, were attacked and their prisoners released. The sheriff of Westmoreland county, finding himself unable to cope with the boisterous strikers secured a large number of uniformed policemen from the city of Pittsburgh, and quartered them in the company stores in the neighborhood of Mt. Pleasant.

Grown bolder by repeated successes and liberal supplies of Hungarian whisky, the fiery Huns resolved upon war in earnest. On Wednesday, January 20, a mob of 400 men, armed with clubs, knives, coke forks and revolvers, marched from Mt. Pleasant to Stonerville, stopping at various plants along the route, driving away the men at work, breaking down oven fronts, demolishing wheelbarrows, and throwing loose tools and supplies generally into the burning ovens. At some points resistance was attempted, but the mob swept on beating a number of bosses almost to death. Returning in the middle of the afternoon they were met at Moorewood plant by the official clans, numbering about sixty-five men in uniform. After a parley of some minutes the fight began with an attempt to arrest some leaders, for whom warrants had been issued.

The mob consisted largely of Hungarian women, who brandished knives and other warlike implements in the air. The sheriff's posse made a final charge on them and at once the whole line of strikers broke and fled in hopeless confusion up the hill, making an occasional stand and firing on the officers below, who returned it and hastened in pursuit. Fourteen prisoners were captured and taken to the Greensburg jail, the wives of some of them being taken to the county home. The same state of affairs existed in the southern end of the region and Sheriff Sterling of Fayette county, made many arrests there.

Such was the condition of affairs when, on Wednesday, January 28, a great mass meeting of cokers, numbering many thousands, assembled in Scottdale. In the meantime Mr. Max Schamberg. the Austro-Hungarian Consul at Pittsburgh, had been called to the region to control his countrymen. He appeared at the meeting and delivered an address urging upon the strikers the necessity of a compromise. He read the following correspondence between himself and Mr. H C. Frick. The letter written by him to the H. C. Frick Coke Company was as follows.

"Gentlemen: I desire, formally, to present to you the following

proposition already made verbally during the last few days, with a view of assisting towards a peaceable settlement of the labor difficulties in the coke regions affecting Austro-Hungarians in your employ, viz :

"*First.* I propose that you give written assurance to restore, commencing February 15, 1886, the rate of wages prevalent before the last reduction.

"*Second.* To accede to arbitration; or

"*Third.* That you, Mr. H. C. Frick, visit the coke regions with a view of determining the dissatisfaction and listening to the grievances of the Austro-Hungarians there employed."

To this Mr. Frick, for his company, promptly replied as follows:

"SIR: I have your favor of to-day in relation to the strike by the Hungarians in the Connellsville coke region. As all the operators employ them in about equal proportion with ourselves, we can speak as to those only who were lately in our employ.

"As to them I would say that they gave us no previous notice, whatever, of any demand, but abruptly severed their relations with us and united in a mob to destroy our property and terrorize and assail our peaceful employés who wanted to work. While they maintain this attitude of hostility, they can claim no relationship to us which deserves consideration. Let them peaceably leave our employment and deliver up our property if dissatisfied, or resume work. If they choose the latter course it will then be time enough to treat with them for higher wages. If the coke business improves, as we hope it will in the near future, the price will advance and we will then, as we have always said and intended, gladly share the benefit of it with our employés, by advancing their wages. We appreciate your kind interest in this matter and trust, understanding their language and enjoying their full confidence as you do, your intervention may avoid further trouble or misunderstanding between us"

The foregoing is given as a clear statement of the situation and the part taken in the strike by the Hungarians.

A number of speeches were made of a conciliatory nature, and one by the Rev. Father Lambing of Scottdale, was especially influential with the English-speaking people. By the time, however, it was translated very imperfectly into four or five other languages, by agitators hostile to its spirit, there was a clashing and confusion of tongues to be compared only with that at the tower of Babel.

Reports from the region showed the strikers firm and determined, and this meeting ended in a most conspicuous failure as regarded a prospect of compromise. Succeeding days brought more misery to the workingmen and more universal bitterness as a consequence. Supplies were being collected from the citizens of the surrounding country, most of whom were afraid to refuse.

On February 8, 1886, another meeting was convened at Scottdale.

As a large delegation of 350 strikers was passing the Henry Clay mine of the H. C. Frick Company, they attacked and drove away a number of men at work on the yard. A workman there, who had been terribly beaten a few days before, became frightened, drew his revolver and shot another belonging to the mob. Becoming violently enraged the whole delegation rushed to the scene and failing to find the assailant there, they threw their car slats on the engine-house floor, knocked out the heads of oil barrels there lying, and saturating the entire place, set fire to it with terrible results. The entire tipple and engine-houses were soon in flames and the ringing bells and blowing whistles proclaimed that desperadoes had left the marks of their violence. They were not arrested, and their story was cordially applauded when related at the Scottdale meeting. These are merely instances of the conduct of this strike of 1886. The operators became alarmed and the terror of the communities became more and more intense.

On February 20 the operators held a meeting in Mr. Donnelly's office at Everson. After discussing the whole matter for hours it was decided to advance the price of coke to $1.35 per ton and grant the demand of their employés, representatives of whom were in waiting a short distance away. The news was joyfully received by all except the Hungarians, who expressed a grunt of disapproval and demanded the release of their countrymen who were in prison. Finally, however, work was resumed and the coke regions beamed with the flush of renewed life and vigor.

Cost of Strike.

A statement of the losses of this strike makes an array of figures that is startling. Some of the works were in operation several days longer than others, but this affects the grand total but little, as the calculations are made on thirty working days and no attention is given to the three or four days required to get the ovens heated and in full operation.

On one side are the losses to the syndicate and operators. At the beginning of the strike there were being shipped from the region 900 cars of coke per day, a total of 15,000 tons, which, at the selling price, $1.20 per ton, amounts to $18,000. The syndicate charged ten cents per ton for selling the coke for the operators, which amounts to $1,500 per day, leaving for the operators $16,500. Assuming that it costs the operators ninety-five cents per ton to make the coke, which is a very low estimate, the difference between ninety-five cents and $1.10 the selling price is $2,250 per day on the entire shipment. In the thirty days the syndicate lost $45,000, and the operators $67,000, a grand total of $112,000.

On the other side an amount of money has been lost, that at the new rate of wages it would take the men many months to recover.

Some 10,000 workmen were affected by the strike. The average daily wages throughout the whole region is $1.41 per day. This is based on fifteen ovens a week, at fifty-five cents per oven for drawer, thirty wagons at twenty-seven cents each for digger; seventy-five cents per car for forkers; $1.25 per day for laborers, and $1.50 per day for drivers, tracklayers and workmen of that class. Taking the 10,000 men at $1.41 per day the daily loss has been $14,100 and for thirty days $423,000, making a total of losses to both strikers and operators $535,000.

The losses to operators should be considerably more than the figures given, considering the damage to their property, and the general loss from inactive machinery, &c. These, together with store profits, if there had been no strike, increases the loss by several thousand. Then the railroads lost in revenue from freights $350,000. This has not been an actual loss, but has involved great loss to them. The freight engines, cars and crews have been idle, the interest and wages of which will approximate $50,000 more, making a grand total of losses $600,000, or about $20,000 per day for every day during the strike. A fact worthy of mention in this connection is that J. W. Moore & Co., the most extensive independent operators in the region, kept their works running during the entire strike. They gave the men the advance on the condition that the old wages would be resumed if the strike failed. This plant was somewhat remote from the centre of disturbance, and but few attempts were made to join these employés with the strikers.

A number of important effects resulted from this strike and worked almost a revolution in the relations between the employers and employed in the coke region. Experience with the unwieldly masses in the early part of it, showed to the leaders the necessity of more thorough organization. The Knights of Labor had been in the field for some time and had perhaps fifteen hundred members, including laborers of all classes, when the strike began. While this Order did not originate, it gave encouragement to the demand for the advance, and a prominent member of it, Mr. Peter Wise, was made chairman of the various meetings during the strike. The Miners and Laborers' Amalgamated Association had scarcely an identity in the region at this time. What existence it had was limited to a small number of men near Mt. Pleasant. These few embraced the opportunity, however, and at the Scottdale meeting of 28th January, 1886, introduced Mr. Richard Davis, state secretary of the association, who presented the necessity and benefits of organization. Effects of this movement were visible at once, and from that day lodges of the association multiplied throughout the coke region, gathering together thousands of employés of all nationalities. The Hungarians who had, prior to this time refrained from all affiliation with other nationalities, joined this association in large numbers.

Both organizations were stimulated to activity and it is estimated now that eleven thousand of the thirteen thousand coke workers are members of them. Of these the Amalgamated Association claims a large majority of persons employed about the mines. On the whole, the two organizations have about equal membership, with the distinction that the Knights of Labor include a large number of workmen of other classes, while the Amalgamated Association is confined almost entirely to those engaged in mining coal and making coke. The rivalry between these organizations has become bitter, and constant misunderstandings from this source seem detrimental to the best interests of the laboring men.

With this victory in 1886 and the region well banded together in organizations, the coke workers assumed an entirely new attitude toward their employers. They at once set about to redress the many grievances repeatedly announced during the strike. They required the operators to take back all the old employés without regard to their part in the strike. If men refused to join the organizations, the companies were commanded to discharge them, and a failure so to do, furnished an immediate pretext for a strike. Frequently the superintendents, on penalty of having the coke works stopped at great inconvenience and loss if they refused, were forced to discharge non-union men and employ those put forth by the organizations. At one plant the members of the Amalgamated Association refused to work with Knights of Labor and the discharge of several Knights resulted in a criminal prosecution for conspiracy in the Westmoreland county courts. In many instances these petty strikes were begun in spite of the protests of the officers of the organizations, who did not fail to see the futility of trying to treat with the corporations, while unable to control their own people.

One complaint urged by the miners, however, was an eminently just one. The mine wagons in the coke region did not meet the requirements of the law, which requires that all wagons in the same mine shall be uniform in size. The miners summoned mine inspectors William Jenkins and J. J. Davis to the region to have all cars measured and branded. These gentlemen responded and went with assistants to every mine in the region, each inspector going to those of his own district. There was a great diversity of results. At some mines wagons supposed to hold thirty-three and one-third bushels, ran from twenty-six to forty bushels. At others the wagons were found all too large and at still others too small. They were all made to comply with the law and a great obstacle to peace in the region was thus finally removed.

In April of 1886, when the region had assumed its natural activity, the syndicate advanced the price of coke from $1.35 to $1.50 per ton. An advance of wages was also voluntarily given to the workmen. In the months that followed the trade improved and several other small

advances were given during the year of 1886. Besides this there was a general adjustment of methods about the coke yards, the miners requesting the employment of special workmen to clean the yards and tracks. So it went on with new advantages gained gradually by the cokers, and an understanding with the operators, in which the latter agreed to "take under advisement a just advance in wages when the selling price of coke increases." This seemed to offer a solution of the difficulties that had become so burdensome. The prospect, however, was soon to be dispelled, when on January 31, 1887, the price of coke was raised to $2.00 per ton, the advance being 33⅓ per cent.

The miners waited for some time in the hope of having their wages increased, and then came the same old agitation, which was this time the more complicated because of conflicting propositions by the two labor organizations. The operators offered an advance of five per cent. but the miners considered it too small and refused to accept, demanding at first 33⅓ per cent. and subsequently reducing it to 20 and 12½ per cent. Finally after many meetings and much discussion, the following agreement was made and signed by members of both the labor organizations and by John F. Atcheson for the Syndicate and Coke Producers' Association:

First. That five persons constitute a board of arbitration.

Second. The employés to select two persons, the operators to select two persons, and the four thus selected to select a fifth person, who shall be umpire and shall be a disinterested person.

Third. That the question for the board to decide shall be the just and fair increase in the rate of wages in the Connellsville coke region as per agreement on December 24, 1886.

Fourth. The decision of the board to be final, and to date from February 1, 1887.

The number comprising the board of arbitration was subsequently increased to seven, named as follows: For the operators James M. Bailey, ——— Scaife and A. W. Bliss; for the miners William Mullen, John R. Byrne and John McBride, the latter being from Ohio. These six selected as umpire Mr. John B. Jackson, of Pittsburgh, a retired gentleman of wealth, who is most widely known as a philanthropist and social reformer.

The whole case was fully laid before the board, the workingmen as plaintiffs in the case, claiming an advance of 12½ per cent. in accordance with the agreement made in December, 1886, recited above. The operators on the other hand said in reply that, while ostensibly the cokers were not receiving a commensurate advance, as a matter of fact four voluntary advances had been granted since coke was raised to $1.50 in May 1886. They produced sworn statements showing that each man did less work than formerly, and more men were required now to run the same number of ovens. They claimed, taking all in all, that the advance in wages was really more than the

advance in selling price. They also claimed that they were now paying higher wages than any other similar labor in the country; they showed that the actual selling price of coke was about $1.74 instead of $2.00 as quoted. This arbitration was held in April, 1887; some weeks after (April 22) Umpire Jackson announced the following award:

"After a thorough and careful consideration of the evidence brought before me on the question concerning the article in your agreement of December 24, 1886, reading, "to take under advisement a just advance in wages, when the selling price of coke is advanced," and after having seen the contracts for the delivery of coke and verified the statements made by Secretary Atcheson, and submitted by him to the arbitrators, I find that there should not be any advance in wages until there is a further advance in the price of coke.

Respectfully,

John B. Jackson."

This announcement was received with emphatic disapprobation by the great body of the cokers, and forgetful of the fourth condition of the agreement made by their representatives, they resolved at once upon a strike. The leaders among the cokers resisted the idea of a strike, the Knights of Labor officers showing special activity in that direction, but their protests were swept aside, and by May 1, 1887, the strike was general throughout the region. All attempts to compromise were futile, as the miners contended the arbitrator did not decide the real question at issue, viz: "what a proper advance would be," *not* "should there be an advance." It was the general opinion at the time that the gentlemen who presented the case of the operators, *had* shrewdly shifted the ground, the opposing counsel failing to discern in what position they were being placed. The cokers were getting better wages than other classes of laborers, as was shown by sworn statements, and on a comparison of rates, there could be no doubt as to the issue of the arbitration. At about the time when it was thought the strikers would suffer defeat, June 11, 1887, an announcement was made that the H. C. Frick Company's works would resume at twelve and one-half per cent. advance. This created amazement among the other operators who refused absolutely to accede. It was understood that the Carnegie Bros. had extensive contracts for steel rails for July and August delivery at good prices, and their controlling interest in the Frick Company caused the advance. The other operators refused firmly and their employés returned to work at the old wages. Subsequently changes were made in the Frick Company's scale, and the wages now are the same throughout the region.

Cost of Strike.

By methods similar to those employed in the calculation of loss during the strike of 1886, it is estimated that the loss to the laborers in this strike was about $750,000, not taking into account the loss to furnacemen, &c. To the operators, with coke selling at $1.74 (the cost of making a ton of coke having been computed by Mr. John Fulton, general manager of the Cambria Iron Company, to be $1.29), the loss during this strike was not less than $192,000. Taking the wear and tear and depreciation of the coke plants, machinery, &c., as also the loss to the railroad companies, the loss of this strike will not fall much below $1,000,000.

Thus ended the last great strike in the Connellsville Coke Region. During the subsequent months the relations of the employers and employed has been more peaceful. We still find the old enemies of its prosperity at work, and the present outlook is not very encouraging. The old coke syndicate was dissolved in the latter half of 1887, and the old tendency to cut in prices again shows itself. A review of these pages will show forcibly enough the great misfortune and disaster that have followed in the wake of the strikes and should impress upon the employer and employed alike the importance of a proper conception of each others rights, and the advantages of mutual concession. Thus far the identity of the interests of labor and capital do not seem to be fully appreciated in this region.*

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THE STATISTICS OF STRIKES.

The following statistics of strikes in Pennsylvania during the last six years, were collected by the National Commissioner of Labor, Hon. Carroll D. Wright. The statistics of strikes lasting less than seven days have also been collected, but space forbids their use in this Report. Besides, the strikes which covered a period of seven days or longer, embrace the principal ones which happened during the period mentioned.

It may be noted in studying these statistics that the two leading causes for striking were to increase wages, or to prevent a reduction. The number of strikes for an increase was two hundred and sixty-one, of which one hundred and ten succeeded, either wholly or in part, and the remainder were failures. The term success in part means that the strikers obtained a portion, at least, of the advance demanded, but not the whole, and this covers a very considerable number. The number of strikes to resist a fall, was one hundred and thirty, of which sixty-six succeeded, and the rest were failures. Classified by years, the following record appears:

		1881.			
For increase, ...	46	Succeeded, ...	21	Failed, ...	25
Against reduction, . .	10	Succeeded, ...	4	Failed, ...	6
		1882.			
For increase, ...	16	Succeeded, ...	7	Failed, ...	9
Against reduction, . .	15	Succeeded, ...	4	Failed, ...	11
		1883.			
For increase, ...	28	Succeeded, ...	12	Failed, ...	16
Against reduction, . .	31	Succeeded, ...	7	Failed, ...	24
		1884.			
For increase, ...	12	Succeeded, ...	3	Failed, ...	9
Against reduction, . .	36	Succeeded, ...	13	Failed, ...	23
		1885.			
For increase, ...	41	Succeeded, ...	18	Failed, ...	23
Against reduction, . .	23	Succeeded, ...	7	Failed, ...	6
		1886.			
For increase, ...	118	Succeeded, ...	49	Failed, ...	68
Against reduction, . .	15	Succeeded, ...	8	Failed, ...	7

Among other causes for striking, was the employing of men who did not belong to labor organizations. This was the principal cause for striking, beside those above mentioned.

The loss to employed and employer is also given in this table. It must be mentioned, however, that these figures are only approximations, and the reader must be very careful in using them, always remembering that the data for estimating the loss in many cases was necessarily very imperfect. This is particularly the case with respect to the losses of employers. The figures in the latter column, contain-

ing these, were in some cases the estimates by the employers; in others, they were estimates by the commissioners who investigated the subject.

In estimating losses they figured the profits which would have been won had no strikes occurred; but for many reasons there might have been none; in other cases they might have been larger than the estimates here given.

The direct losses to employés can be more accurately estimated than those to employers. The losses to employés, by years, are the following:

1881,	$542,250 00
1882,	3,044,198 00
1883,	1,603,284 00
1884,	1,726,211 00
1885,	2,734,618 00
1886,	2,547,666 00
Total,	$12,198,227 00

The estimates of losses to employed and employer, in the aggregate, have been given to the public. Notwithstanding their huge proportions they are, after all, a small element in the question. They are eloquent of the sufferings endured by the workingmen to attain their ends; and convincing proof, too, of the firmness of employers. But these thoughts are only trifles considered in the light of the future. The question of questions concerning strikes is, what is their educational effect on employed and employer? The loss of wages, on the one hand, and the loss of profits and, perhaps, of business, on the other, are indeed facts of serious moment, but of small account weighed in the balance against the educational effect of these occurrences.

A strike between the employed and the employer is like a war between two nations; it has a sobering and enlightening effect. They see more clearly after the conflict is ended. It is always said after the struggle is over, Why could not the end have been attained by treaty? by arbitration? or other peaceful method? It is a trite fact, that the best lessons are the costliest, and so are the lessons learned by employed and employer in defining their relations. When workingmen have decided to face their employer in this kind of industrial conflict, they have not always known in the beginning what a strike meant. They have supposed that after a few days a concession of some kind would be granted, and that work would be resumed. No strike has ever been begun with the expectation of failing. Workingmen have always been hopeful in these conflicts; but after a strike has been declared and their little store has been exhausted, and the means sent by fellow-laborers has gone in the same way, and destitution and suffering have intruded their unwelcome presence, and wives and children look haggard and cry for bread, then the nature of a

strike, if continued so long, is understood. One consequence, therefore, of striking is that they are not so optimistic concerning the future, and are less inclined to engage in a second, especially if the first ended in complete failure. Even if they have succeeded in getting an increase of wages, or in preventing a fall, or in carrying some principle, like the discharge of a non-unionist or non-society member, they find at last that their success has turned to ashes; that they have suffered a real defeat in injuring their employers' business, or in other ways, and therefore are less eager to engage in another.

Turn now to the employer. He also learns his lesson; he learns that a strike means a derangement of his business. Not only are his profits gone for a period, but future profits also are sacrificed. The cases are quite numerous in which the business of producers has been permanently injured by these sad experiences. Trade has gone never to return. In these cases both employed and employer have been permanent sufferers. These are the most costly consequences from striking. What is the experience of Great Britain in this regard? A few years ago strikes were frequent, just as they are here to-day. In all kinds of business they constantly happened; production and exchange were deranged, and the loss in money and in general comfort was enormous. But during all this period both classes were learning, slowly perhaps, but surely, and so, after not many years, both became sufficiently enlightened to realize that a strike should never be undertaken if it could possibly be avoided. Therefore, instead of striking whenever a reduction in wages is deemed needful, or some other change which is displeasing to the workingmen, conferences are ordered and usually a conclusion is reached, which, if not wholly satisfactory to either party, has the effect at least of avoiding a strike. Thus we say, that judging from English experience, strikes have had a sobering and clarifying effect, and we are therefore led to believe that the outcome of strikes in this country will be the same. In other words, we believe that every strike brings us nearer to the end of this mode of adjusting the differences between the two classes. It is deeply regretted that some means is not adopted for preventing them; but if they must occur, like wars between nations and law-suits between individuals, they teach a rich lesson and will yield, though too long delayed, an enduring peace. The longer they are continued, the more severe will be the suffering, the heavier will be the loss to workingmen and to their employers, and the greater too will be the security against their recurrence, when the striking fever shall have ceased.

While, therefore, we may study the record here presented with some profit, we should not miss the greatest lesson of all which is to be drawn from these occurrences. A wasteful record indeed, but the conclusion is that by no easier or cheaper method could workingmen and their employers acquire that spirit of moderation and knowledge of the situation needful to coöperate in the most efficient manner.

STATISTICS

INDUSTRIES AND YEARS.	LOCALITY.	CAUSE OR OBJECT.
1881.		
Boots and Shoes.		
Employees, sole leather room,	Philadelphia,	For discharge of two non-union employees.
Fitters,	Philadelphia,	Against reduction of wages,
Clothing Trade.		
Tailors,	Pittsburgh,	For increase of wages,
Gas and Coal.		
Miners,	Mt. Pleasant,	For increase of wages,
Miners, chargers, &c., coke works,	Connellsville, region,	For increase of wages,
Glassworkers.		
Finishers, glass chimney works,	Pittsburgh,	For increase of wages,
Gatherers, green glass works,	Pittsburgh,	Against reduction of wages,
Blowers, flint glass works,	Sharpsburg,	Against employment of one non-union man.
Machines and Machinery.		
Moulders, lock factory,	Pittsburgh,	For increase of wages,
Boilermakers,	Pittsburgh,	For increase of wages,
Boilermakers,	Pittsburgh,	For adoption of new bill of prices,
Metals and Metallic Goods.		
Employees, iron furnace,	New Castle,	For increase of wages,
Patternmakers and moulders, iron foundry.	Pittsburgh,	For increase of wages,
Tinners, tinware factory,	Pittsburgh,	For increase of wages,
Employees, barbed iron works,	Pittsburgh,	Against reduction of wages,
Moulders, iron foundry	Erie,	For increase of wages and limitation of apprentices.
Moulders, iron foundry,	Erie,	For increase of wages and limitation of apprentices.
Puddlers, iron plate works,	Reading,	For increase of wages,
Puddlers, rolling mill,	Reading.	For increase of wages,
Moulders, stove foundry,	Royer's Ford,	For increase of wages,
Moulders, stove foundry,	Reading,	For increase of wages,
Puddlers, iron works,	Hollidaysburg and Duncansville.	For increase of wages,
Mining.		
Miners, &c., coal,	Smithton,	For increase of wages,
Miners, &c., coal,	Dubois and Reynoldsville,	For increase of wages,
Miners, &c., coal,	Reynoldsville,	For increase of wages,
Miners, &c., coal,	St. Mary's,	For increase of wages,
Miners, &c., coal,	Wilkinsburg,	For discharge of pit boss,
Miners, &c., coal,	Montour,	Against reduction of wages,
Miners, &c., coal,	Courtney,	Against filling slack without pay,
Miners, &c., coal,	Montour,	Against reduction of wages,
Miners, &c., coal,	Wood's Run,	For change of screen,
Miners, &c., coal,	Dubois,	Against reduction of wages,
Miners, &c., coal,	Elizabeth,	For employment of check weighman,
Miners, &c., coal,	Scott Haven,	For re-instatement of discharged employe.
Miners, &c., coal,	Idlewood.	For employment of check weighman,
Miners, &c., coal,	Washington,	For increase of wages,
Miners, &c., coal,	Hite's Station,	Against reduction of wages,
Miners, &c., coal,	Mahanoy City,	For increase of wages,
Miners, &c., coal,	Pittston,	For payment by the ton instead of by the car.
Miners, &c., coal,	South Fork,	For increase of wages,
Miners, &c., coal,	Leechburg,	For increase of wages,
Miners, iron ore,	Mercerburg,	For increase of wages,
Drivers, coal,	Nanticoke,	For increase of wages,
Miners, coal,	California,	For employment of check weighman,
Miners, coal,	Courtney,	For employment of check weighman,
Miners, coal,	California,	For employment of check weighman,
Miners, coal,	Sandy Run,	For increase of wages,
Miners, iron ore,	Funkstown,	For increase of wages,
Miners, coal,	Montour,	For increase of wages and employment of check weighman.
Miners, coal,	New Castle,	For increase of wages,
Miners, coal,	Coal Bluff,	For payment for "dead work,"
Printing and Publishing.		
Compositors,	Pittsburgh,	For increase of wages, and against obnoxious rules.

OF STRIKES.

Ordered by labor organization.	Establishments. Number.	Establishments. Days closed.	Number of persons engaged in strike.	Number of persons involved in strike.	Beginning.	End.	Duration—days	Succeed'd	Employees. Loss.	Employees. Assistance.	Employers' loss.
No,	1	..	49	49	Feb. 10	Nov. 1, 1881	263	No, ..	$3,920	$400	$2,500
No,	1	.	192	192	Sept. 3	Sept. 10, 1881	7	Yes, .	1,800	.....	.....
Yes,	10	..	121	121	March 27	April 13, 1881	17	Yes,	3,613	....	4 125
No,	1	7	190	190	Jan. 15	Jan. 22, 1881	7	No, .	1,767	...	400
No,	54	20	5,055	5,055	June 6	June 26, 1881	20	No, ..	133,839	.....	36,840
No,	3	8	95	555	August 28	Sept. 5, 1881	8	Yes. ..	7 939	....	1,300
No,	3	..	51	280	Sept. 1	Sept. 8, 1881	7	No, ..	3.192	..	425
Yes,	1	7	40	160	October 17	Oct. 24, 1881	7	No, .	2,000	2,800	500
Yes,	1	.	45	175	March 1	Mar. 16, 1881	15	Yes,	5,119	250	1 000
Yes,	1	...	50	200	April 5	July 1 1881	87	Yes, .	11.250	...	15 000
Yes,	9	.	150	1,300	April 19	July 1, 1881	73	Yes, .	8,000	....	21,500
No,	1	9	75	75	Feb. 7	Feb. 16 1881	9	No, ..	1,080	..	500
Yes,	1	..	40	100	March 20	Mar. 27, 1881	7	No, .	1,200	150	150
Yes,	10	..	74	74	March 28	May 1, 1881	34	Yes,	2 780	....	1,130
No,	1	49	525	525	March 28	May 16. 1881	49	No,	46 305	....	1.200
Yes,	3	91	125	320	April 5	July 5, 1881	91	Partly,	35,000	....	20,000
Yes,	1	14	40	100	April 5	April 19, 1881	14	Partly,	1,800	.....	600
No,	1	25	36	240	April 11	May 5 1881	25	No, .	7.500	....	2 500
No,	1	29	24	215	April 13	May 12. 1881	29	No, .	7,000	....	3 000
Yes,	1	...	44	69	August 12	Aug. 26. 1881	14	Yes,	1.520	.....	500
Yes,	1	...	85	93	August 12	Aug. 23 1881	11	Yes, .	2 600	.....	
No,	1	..	8	62	Dec. 12	Feb. 12, 1882	62	No, .	2,000	.....	3,500
No,	1	7	48	48	Jan. 6	Jan. 13, 1881	7	Yes,	619	....	100
Yes,	1	14	200	220	Jan. 18	Feb. 1, 1881	14	Partly,	2 337	...	
Yes,	1	10	240	240	Jan. 21	Feb. 1, 1881	10	Yes,	1 856	.....	1,500
No,	2	84	275	275	Feb. 1	April 26, 1881	84	Partly,	25 000	.....	14 000
No,	1	12	170	170	Feb. 5	Feb. 17, 1881	12	Yes, .	3,995	....	1.000
Yes,	1	62	199	190	March 9	May 10 1881	62	No, .	14,433	....	5 000
No,	1	7	105	120	March 15	Mar. 22. 1881	7	Yes,	1,656	...	400
Yes,	1	56	195	195	March 15	May 10, 1881	56	No,	14.352	....	5,000
No,	1	14	55	60	April 5	April 19, 1881	14	Yes,	1,778	.....	400
Yes,	1	20	205	240	May 1	May 21, 1881	20	Yes, .	5 843	.....	2,000
Yes,	1	7	200	220	June 1	June 8, 1881	7	Yes, .	3 168	.....	600
Yes,	1	14	270	270	June 15	June 29, 1881	14	Yes, .	8,100	.....	1,200
No,	1	48	53	53	June 29	Aug. 17, 1881	48	Yes, .	3 911	...	1,000
No,	1	7	28	28	July 1	July 8, 1881	7	Yes, .	287	...	50
No,	1	25	47	47	July 7	Aug. 1, 1881	25	Yes.	2,319	.....	500
Yes,	1	12	36	190	July 20	Aug. 1, 1881	12	Partly,	1.000	300	300
No,	1	..	42	150	July 20	Aug. 1, 1881	12	Yes,	1,000	.....	500
No,	5	66	158	180	August 1	Oct. 6, 1881	66	No, .	11 421	....	5,250
No,	1	42	125	125	August 7	Sept. 18, 1881	42	No, ..	7.594	.....	1,500
No,	1	21	16	20	August 10	Aug. 31. 1881	21	No, .	270	....	216
No,	4	11	191	2,300	August 13	Aug. 24, 1881	11	No,	20.000	.....	5 000
No,	1	75	110	110	Sept. 1	Nov. 15, 1881	75	Yes, .	11,733	.....	3,000
No,	1	27	50	280	Sept. 1	Sept. 28, 1881	27	Yes,	4 175	....	1.000
No,	1	71	100	110	Sept. 1	Nov. 11, 1881	71	Yes, .	10.960	..	2 500
No,	1	36	50	280	Sept. 5	Oct. 11, 1881	36	No, ..	5,460	500	1,000
No,	1	14	18	22	Sept. 10	Sept. 24, 1881	14	No,	231	...	240
No,	2	22	420	420	Sept. 23	Oct. 15, 1881	22	Partly,	14,364	.....	2.700
No,	1	80	60	60	October 20	Jan. 8, 1882	80	Partly,	3,293	. . .	1,050
No,	1	21	90	100	October 27	Nov. 17, 1881	21	No,	4,590	.....	1,000
Yes,	1	.	30	30	May 18	June 17, 1881	30	Yes,	1 350	...	15,000

STATISTICS OF

INDUSTRIES AND YEARS.	LOCALITY.	CAUSE OR OBJECT.
1881.		
Printing and Publishing.		
Compositors,	Philadelphia,	For increase of wages,
Compositors,	Philadelphia,	For increase of wages,
Public Ways Construction.		
Laborers, railroads,	Warren,	For increase of wages,
Shipbuilding, &c.		
Carpenters and caulkers,	Pittsburgh,	For increase of wages,
Stonecutters.		
Stonecutters,	Pittsburgh and Allegheny,	For increase of wages,
Tobacco.		
Cigarmakers,	Allentown,	For increase of wages.
Cigarmakers,	Corry,	For adoption of new bill of prices,
Cigarmakers,	Pittsburgh,	Against reduction of wages.
Cigarmakers,	York.	For discharge of one non-union man.
Cigarmakers,	Pittsburgh.	For increase of wages,
Cigarmakers,	Philadelphia,	For increase of wages,
Cigarmakers,	Corry,	Against reduction of wages,
Miscellaneous.		
Salt boilers,	Natroua,	For increase of wages,
Employees, piano factory,	Philadelphia,	For increase of wages,
1882.		
Carpenters,	Philadelphia,	For increase of wages,
Carpeting—weavers,	Philadelphia,	Against accepting of firms' terms for new article of manufacture.
Employees, cotton goods,	Norristown,	Against reduction of wages,
Coke Works.		
Miners, chargers, &c., coke works,	Elk Lick,	Against reduction of wages,
Glass Works.		
Carriers in, bottle glass works,	Pittsburgh,	For increase of wages,
Warming-in boys,	Pittsburgh,	For increase of wages,
Blowers, bottle glass works,	Honesdale,	Against employment of more than two apprentices to a furnace.
Employees, window glass works,	Norristown,	For increase of wages.
Blowers, flint glass works,	Leasdale,	Against increase of apprentices,
Blowers, flint glass works,	Sharpsburg,	Against employment of one non-union man.
Machines and Machinery.		
Employes, machine and boiler shop,	New Castle,	For increase of wages, &c.,
Metals and Metallic Goods.		
Puddlers, iron works,	Harrisburg,	For increase of wages,
Puddlers, iron works.	Harrisburg,	For increase of wages,
Employees, steel works,	Homestead,	Against reduction of wages and signing contracts.
Moulders, stove foundry,	Pittsburgh and Allegheny,	For increase of wages,
Employes, barbed wire works,	Pittsburgh,	For recognition of union and re-instatement of 100 discharged union employes.
Hookers-up, straighteners, &c., iron works.	Pittsburgh,	For increase of wages,
Moulders, stove foundry,	Beaver Falls,	For increase of wages,
Puddlers, helpers and rollers, iron works.	McKeesport,	For recognition of union,
Puddlers, iron and steel works,	Pottsville,	For increase of wages,
Employes, iron works, *	Western Pennsylvania,	For adoption of new scale of prices,
Employes, iron works,	Erie,	For adoption of new scale of prices,
Puddlers and helpers, rolling mill,	Chester,	For re-instatement of one discharged employe.
Rollers, steel works,	Homestead,	For increase of wages,

* This was a general strike, affecting the iron workers of several States. It was ordered by the Amalgamated Association of Iron and Steel Workers, to compel the adoption of their new scale of prices, which was the same as in 1881, except that it increased the price per ton of the boilers and puddlers

STRIKES—Continued.

Ordered by labor organization.	Establishments. Number.	Establishments. Days closed.	Number of persons engaged in strike.	Number of persons involved in strike.	Beginning.	End.	Duration—days.	Succeeded.	Employees. Loss.	Employees. Assistance.	Employers' loss.
Yes,	1	.	3	20	October 5	Oct. 12, 1881	7	No,	$280	$150	$500
Yes,	1	.	10	10	October 5	April 4, 1882	181	Yes,	140	. . . . .	500
No,	1	7	200	200	July 20	July 27, 1881	7	No,	1,500	. . . .	400
Yes,	7	. . .	250	250	Sept. 13	Sept. 28, 1881	15	Yes,	4,073	. . .	. . . . .
Yes,	7	7	103	103	Feb. 7	Feb. 14, 1881	7	Yes,	1 700	. . . .	1 000
Yes,	2		100	110	July 12	Aug. 1, 1881	20	Yes,	2,000	600	1,000
Yes,	2	21	30	46	July 12	Aug. 2, 1881	21	Yes,	414	210	. .
Yes,	1		5	5	July 15	Aug. 1, 1881	17	Yes,	105	. . .	200
Yes,	1	. . .	18	21	July 16	Aug. 7, 1881	22	No,	315	84	500
Yes,	10		400	400	Sept. 25	Oct. 14, 1881	19	Yes,	7,000	. . . . .	10,000
Yes,	1	11	175	250	Nov. 20	Dec. 1, 1881	11	Partly,	2,400	. . .	. . . . .
Yes,	1	.	12	12	Dec. 10	Jan. 24, 1882	45	No,	120	104	. . . . .
No,	1		550	550	May 17	June 1. 1881	15	Partly,	6,000	. . . . .	1,000
No,	1	15	100	100	Oct. 31	Nov. 15, 1881	15	Yes,	2,200	. . . . .	2,400
Yes,	70	. .	500	500	May 1	May 22, 1882	21	Partly,	12 000	2,100	8 000
No,	1	.	60	212	Aug. 11	Sept. 1, 1882	21	No,	6,500	. . . . .	4,500
No,	1	21	160	160	April 1	April 22, 1882	21	No,	2,000	. . .	250
No,	1	31	65	100	June 30	July 31, 1882	31	Yes,	4,160	. . . .	3,380
No,	1	. . .	16	120	April 12	April 19, 1882	7	No,	786	. . . . .	50
No,	1		4	4	May 19	Aug. 12, 1882	85	No,	198	. . . .	. . .
Yes,	1	6	26	65	June 20	June 30, 1882	10	Yes,	1,475	. . . .	500
Yes,	1	.	29	60	Sept. 1	Feb. 2. 1883	154	Yes,	7,500	3,960	5,000
Yes,	1		24	24	Oct. 1	Oct. 8, 1882	7	No,	576	715	. .
Yes,	1	14	48	152	Nov. 7	Jan. 24, 1883	85	No,	12,000	457	200
Yes,	1	1	151	151	June 24	Aug. 15, 1882	52	No,	10,000	300	5 000
No,	1	13	45	295	Jan. 2	Jan. 15, 1882	13	No,	8 280	. . . .	2 000
No,	1	13	35	235	Jan. 2	Jan. 15, 1882	13	No,	5,328	. .	1,000
Yes,	1	45	600	715	Jan. 5	Mar. 18, 1882	72	Yes,	60,750	2,000	5 000
Yes,	6	14	146	240	Feb. 6	Feb. 20, 1882	14	Partly,	6,089	360	1,850
Yes,	1	31	320	320	Nov. 12	April 12, 1882	31	Yes,	15,600	1,000	1,300
No,	1	. . .	15	50	April 6	April 20, 1882	14	No,	1,350	. . . .	500
Yes,	1	56	20	34	April 22	June 17, 1882	56	Yes,	3,395	150	400
Yes,	1	21	150	290	May 1	May 22, 1882	21	No,	11,025	800	1,800
No,	1		37	148	May 4	May, 28, 1882	24	Yes,	5 200		1,000
Yes,	35	111	24,045	24,045	June 1	Sept. 20, 1882	111	No,	2,400,000	400,000	500,000
Yes,	1	111	165	245	June 1	Sept. 20, 1882	111	No,	50,000	3,000	1,200
No,	1		80	80	June 20	Aug. 28, 1882	69	No,	10,000	240	1,000
No,	1	.	20	150	Nov. 3	Nov. 10, 1882	7	Yes,	2,700	. . .	500

from $5.75 to $6.25, less than 10 per cent., the boilers being about 10 per cent. of the whole number of employees, the new scale really increased the former scale only 10 per cent.

STATISTICS OF

INDUSTRIES AND YEARS.	LOCALITY.	CAUSE OR OBJECT.
1882.		
Mining.		
Miners, &c., coal,	Elk Lick,	For increase of wages,
Miners, &c., coal,	Elk Lick,	For increase of wages,
Miners, &c., coal,	Woods Run,	Against filling slack,
Miners, &c., coal,	Courtney,	Against filling slack,
Miners, &c., coal,	Fayette City,	For change of rules,
Miners, &c., coal,	Courtney,	For employment of check weighman,
Miners, &c., coal,	Western Pennsylvania,	Against reduction of wages,
Miners, &c., coal,	Scott Haven,	Against reduction of wages,
Miners, &c., coal,	Mansfield,	Against reduction of wages,
Miners, &c., coal,	Mansfield,	Against reduction of wages,
Miners, &c., coal,	Scottdale,	Against reduction of wages,
Miners, &c., coal,	Banksville,	For increase of wages,
Miners, &c., coal,	Wilkes-Barre,	For payment of wages due, and against being compelled to trade at company's store.
Miners, &c., coal,	Fayette City,	For better ventilation,
Miners, &c., coal,	Mansfield,	Against performing work for another establishment in which a strike was pending.
Miners, &c., coal,	Phillipsburg,	Against reduction of wages,
Miners, &c., coal,	Houtzdale,	Against reduction of wages,
Miners, &c., coal,	Winton,	Against reduction of wages,
Miners, &c., coal,	Sutter Station,	Against reduction of wages,
Miners, &c., coal,	Courtney,	For re-instatement of ten discharged employees.
Miners, &c., coal,	Elizabeth,	Against being compelled to trade at company's store.
Miners, &c., coal,	Mansfield,	Against reduction of wages,
Miners, &c., coal,	Mansfield,	Against performing work for establishments in which a strike was pending.
Drivers, coal,	Wilkes-Barre,	For different system of determiniug wages.
Breaker boys, coal,	Warrior Run,	For increase of wages,
Miners, &c., coal,	Fayette City,	For regular payments,
Miners, &c., coal,	Courtney,	For employment of check weighman,
Miners, &c., coal,	Coal Bluff,	For increase of wages,
Miners, &c., coal,	Elk Lick,	Against reduction of wages,
Wooden Goods.		
Carpenters, planing mill,	Pittsburgh,	Against reduction of wages,
Cabinetmakers, coffin factory,	Allegheny,	For increase of wages,
1883.		
Boots and Shoes.		
Shoemakers,	Allentown,	For increase of wages,
Shoemakers,	Allentown,	For increase of wages,
Employees,	Philadelphia,	Against reduction of wages,
Building Trades.		
Painters,	Philadelphia,	For increase of wages,
Plasterers,	Pittsburgh,	For privilege of doiug their own lathing.
Plumbers,	Pittsburgh and Allegheny,	For increase of wages,
Carpeting.		
Weavers, tapestry,	Philadelphia,	For increase of wages,
Clothing.		
Tailors,	Philadelphia,	For increase of wages,
Cotton Goods.		
Beamers,	Philadelphia,	For increase of wages,
Cotton and Woolen Goods.		
Weavers,	Philadelphia,	Against reduction of wages,
Beamers and twisters,	Philadelphia,	For increase of wages,
Weavers,	Philadelphia,	For increase of wages,
Spinners,	Glen Riddle,	For increase of wages,
Gas and Coke.		
Miners, chargers, &c., coke works,	Connellsville,	Against reduction of wages,

STRIKES—Continued.

Ordered by labor organization.	Establishments. Number.	Establishments. Days closed.	Number of persons engaged in strike.	Number of persons involved in strike.	Beginning.	Ending.	Duration—days.	Succeeded.	Employees. Loss.	Employees. Assistance.	Employers' loss.
No,	1	22	50	80	Jan. 10	Feb. 1, 1882	22	Yes,	$1,440		$1,800
No,	3	34	250	400	Jan. 15	Feb. 18, 1882	34	Yes,	15 000		10,600
No,	1	18	58	62	Mar. 7	Mar. 25, 1882	18	Yes,	2,279		300
No,	1	7	100	110	Mar. 14	Mar. 21, 1882	7	Yes,	1,617		250
No,	1	14	80	86	Mar. 14	Mar. 28, 1882	14	Yes,	2,528		400
No,	1	13	115	135	Mar. 24	April 6, 1882	13	No,	3,638		800
Yes,	20	142	2,174	2,174	April 1	Aug. 21, 1882	142	No,	500,890	$22,733	81,900
Yes,	1	126	220	220	April 1	July 5 1882	126	No,	43 824		7,000
Yes,	1	55	66	66	April 1	May 25, 1882	55	Yes,	6,019		500
Yes,	1	33	82	82	April 1	May 4, 1882	33	Yes,	4 526		700
No,	1	7	96	96	May 2	May 9, 1882	7	Yes,	1,037		150
No,	1	7	28	28	May 18	May 25, 1882	7	No,	302		50
No,	1	8	640	640	May 21	May 29, 1882	8	Yes,	6,600		1,000
No,	1	75	34	40	May 27	Aug. 10, 1882	75	No,	5 096		500
No,	1	8	150	150	June 5	June 13, 1882	8	Yes,	1,109		150
No,	13	87	66	66	June 5	Aug. 30, 1882	87	No,	73,956		34 800
No,	1	35	875	925	June 5	July 10, 1882	35	No,	30,000	1,500	10,000
No,	1	10	60	190	June 10	June 20, 1882	10	No,	1,500	300	600
Yes,	1	38	130	130	July 14	Aug. 21, 1882	38	No,	8,112		1,500
No,	1	38	140	140	July 15	Aug. 22, 1882	38	Yes,	8,918		2,000
Yes,	1	28	290	290	July 26	Aug. 23, 1882	28	No,	14,821		3 000
Yes,	1	18	40	40	Aug. 3	Aug. 21, 1882	18	No,	1,440		250
No,	1	13	82	82	Aug. 8	Aug. 21, 1882	13	No,	2,165		300
No,	1		268	400	Aug. 10	Aug. 17, 1882	7	No,	2,747		1,000
No,	1		50	50	Aug. 15	Aug. 22, 1882	7	No,	150		50
No,	1	7	50	60	Aug. 16	Aug. 23, 1882	7	Yes,	882		150
No,	1	7	70	80	Aug. 28	Sept. 4, 1882	7	Yes,	1,127		200
Yes,	1	14	96	96	Aug. 31	Sept. 14, 1882	14	Yes,	2,615		500
No,	3	30	250	330	Sept. 20	Oct. 20, 1882	30	Yes,	13,260		7,740
No,	1		12	12	Jan. 9	Jan. 16, 1882	7	No,	162		250
Yes,	1		50	50	Mar. 7	Mar. 21, 1882	14	Yes,	1,350		2,000
Yes,	1	30	55	105	Feb. 15	May 15, 1883	89	No,	5,000	2,500	2,000
Yes,	1	61	25	54	Feb. 15	May 15, 1883	89	Yes,	4,500	2,500	3,000
No,	1	7	645	645	April 2	April 9, 1883	7	Yes,	8,205		
Yes,	14	7	411	411	April 1	April 22, 1883	21	Partly,	12,000	4,832	7,000
No,	3	14	21	30	May 15	May 29, 1883	14	No,	918		255
Yes,	19		113	113	Sept. 24	Oct. 6, 1883	12	Yes,	3,000	1,000	5,823
No,	1		36	150	Aug. 11	Sept. 16, 1883	36	Partly,	4,500		3,000
Yes,	1		10	10	April 1	April 13, 1883	12	No,	300		
No,	1		5	5	April 20	May 7, 1883	17	Yes,	162		100
No,	1	35	125	141	Feb. 8	Mar. 15, 1883	35	Yes,	5,062		4,000
No,	1		16	242	April 3	April 10, 1883	7	No,	1,500		1,000
No,	1	28	300	735	April 10	May 8, 1883	28	No,	13,000		2,000
No,	1	14	17	395	May 1	May 15, 1883	14	No,	4,700		1,000
No,	1	7	90	96	Feb. 9	Feb. 16, 1883	7	No,	891		100

INDUSTRIES AN YEARS.	LOCALITY.	CAUSE OR OBJECT.
1883.		
Gas and Coke.		
Miners, coke works,	Greensburg,	For increase of wages,
Miners, coke works,	June Bug Station,	Against signing contract,
Miners, coke works,	Stoneville,	Against signing contract,
Miners, coke works,	Stoneville,	Against signing contract,
Glass.		
Carriers in, bottle glass works,	Pittsburgh,	For increase of wages,
Gatherers, green glass works,	Pittsburgh,	For increase of wages,
Blowers, flatteners, &c., window glass works.	Western Pennsylvania,	Against reduction of wages, &c.,
Employees, window glass works,	Blossburg and Covington.	Against reduction of wages, &c.,
Blowers, flint glass works,	Pittsburgh,	Against increase of apprentices,
Leather and Leather Goods.		
Shavers, calf kid leather factory,	Philadelphia,	Against reduction of wages,
Beam hands, calf kid factory,	Philadelphia,	Against performing work for an establishment in which a strike was pending.
Metals and Metallic Goods.		
Moulders, stove foundry,	Pittston,	Against reduction of wages,
Moulders, iron foundry,	Pittsburgh,	Against change in method of working.
Moulders, iron foundry,	Philadelphia,	Against reduction of wages,
Puddlers, iron works,	Coatesville,	Against reduction of wages,
Heaters, rollers, catchers, &c., iron works.	Birdsboro',	Against reduction of wages,
Puddlers, rolling mill,	Hollidaysburg,	For discharge of one non-union man.
Lap-weld furnace men,	Reading,	For increase of wages or increase of running time.
Grinders, axe and saw works,	Pittsburgh,	For increase of wages,
Puddlers and helpers, iron works,	Kittanning,	For more "fix,"
Gold leaf beaters,	Philadelphia,	For increase of wages,
Nailers, iron works,	Pottstown,	Against reduction of wages,
Mining.		
Miners, &c., coal,	West Elizabeth,	For increase of wages,
Miners, &c., coal,	Towanda,	Against reduction of wages,
Miners, &c., coal,	Pittston,	Against alleged excessive dockage,
Miners, &c., coal,	Western Pennsylvania,	Against reduction of wages,
Miners, &c., coal,	Mt. Carmel,	Against reduction of wages,
Miners, &c., coal,	Western Penusylvania,	Against reduction of wages.
Drivers, coal,	Mt. Carmel,	Against paying for oil and cotton used in their lamps.
Miners, &c., coal,	Leechburg,	Against reduction of wages,
Miners, &c., coal,	Western Pennsylvania,	Against reduction of wages,
Miners, &c., coal,	Pardoe,	Against reduction of wages,
Miners, &c., coal,	Coaltown,	Against reduction of wages,
Miners, &c., coal,	Spiketown,	For increase of wages awarded by arbitration board.
Miners, &c., coal,	East End,	Against reduction of wages,
Miners, &c., coal,	Leechburg,	Against reduction of wages,
Miners, &c., coal,	Painter's Run,	For re-instatement of four discharged employees.
Miners, &c., coal,	Mt. Pleasant, Moorewood and McClure's Station.	For re-instatement of two discharged employees.
Miners, &c., coal,	Reynoldsville,	For increase of wages,
Miners, &c., coal,	Dubois,	For increase of wages,
Miners, &c., coal,	New Castle,	For abolition of screen,
Miners, &c., coal,	Shire Oaks,	For increase of wages,
Miners, &c., coal,	Munhalls,	For increase of wages,
Slate pickers, coal,	Pottsville,	For increase of wages,
Miners, coal,	Western Pennsylvania,	Against reduction of wages,
Miners, coal,	Scranton,	Against reduction of wages,
Miners, coal,	Elizabeth,	Against reduction of wages,
Miners, coal,	Karn's City,	Against reduction of wages,
Miners, coal,	Western Pennsylvania,	For increase of wages,
Miners, coal,	Buena Vista and Shaner Station.	Against reduction of wages,
Public Ways Construction.		
Construction hands, railroad,	Pittsburgh,	Against reduction of wages,
Shipbuilding, &c.		
Carpenters and caulkers,	Philadelphia,	For increase of wages and reduction of hours.

STRIKES—Continued.

Ordered by labor organization.	Establishments. Number.	Establishments. Days closed.	Number of persons engaged in strike.	Number of persons involved in strike.	Beginning.	End.	Duration—days.	Succeeded.	Employees. Loss.	Employees. Assistance.	Employers' loss.
No, .	1	30	40	78	Sept. 15	Oct. 15, 1883	30	No, . .	$3.448	. . . . .	$600
No, .	1	48	30	67	Sept. 19	Nov. 6, 1883	48	No, .	4,362	. . . .	800
No, .	1	52	20	42	Sept. 21	Nov. 12, 1883	52	No, .	2,930	. . .	500
No, .	1	31	23	52	Oct. 1	Nov. 1, 1883	31	No,	2,096	. . . . .	400
No, .	1		20	100	May 1	May 12, 1883	11	No, .	400	. . . .	50
No, .	3	7	40	325	May 5	May 12, 1883	7	No, .	2,835	. . .	1 100
Yes, .	17	160	745	1,204	Sept. 1	Feb. 8, 1884	160	Yes, . .	526,000	$58,000	110,400
Yes, .	2	160	100	100	Sept.	Feb. 8, 1884	160	Yes,	23 400	. . . . .	5,500
Yes, .	1	. .	30	30	Sept. 1	Sept. 15, 1883	14	No, .	1,400	576	. . . . .
Yes, .	1	11	5	47	Mar. 23	April 3, 1883	11	Yes,	1,137	400	500
Yes, .	1		14	65	Mar. 23	April 3, 1883	11	Yes, . .	1,388	540	1,200
No, .	1	64	40	95	Jan. 10	April 15, 1883	95	No, .	10 000	2 000	3,000
Yes, .	1		4	9	Feb. 5	Feb. 14, 1883	9	Yes, .	130	. .	25
No, .	1	.	65	90	Feb. 22	Mar. 6, 1883	12	Yes, . .	2 200	. . . . .	200
No, .	1	.	20	60	Mar. 14	April 25, 1883	42	Yes,	3 000	. . . .	. . .
No, .	1	3	30	375	April 3	April 10, 1883	7	No,	4,000	. . . . .	850
No, .	1	14	10	150	April 12	April 26, 1883	14	Yes, . .	2,250	. . . . .	2,500
No, .	1	7	83	673	April 23	May 9, 1883	16	Yes, . .	5,048	. . . .	1,000
No, .	1		50	75	May 1	May 10, 1883	9	No, .	1,350	. . .	500
No, .	1	7	90	225	Sept. 10	Sept. 17, 1883	7	Yes, . .	2,295	. .	300
No, .	1		38	70	Oct. 18	Dec. 5, 1883	48	No,	5 000	200	1,000
No,	1	. . .	65	1,200	Dec. 3	April 5, 1884	124	No, .	30,825	700	8,500
Yes, .	1	212	150	150	Feb. 13	Sept. 13, 1883	212	No, .	39,600	500	5,000
No, .	1	42	60	150	April 2	May 14, 1883	42	No,	10,800	. .	7,000
No, .	1	14	50	160	April 3	April 17, 1883	14	No,	1,500	300	500
Yes, .	35	20	4,023	4,023	May 1	May 21, 1883	20	Partly,	143 666	. .	40,990
No, .	1	7	12	25	May 2	May 23, 1883	21	No, .	600	. . .	150
Yes, .	7	11	792	792	May 4	May 15 1883	14	No, . .	14 969	. . . . .	4,000
No, .	1	7	25	286	May 22	May 29, 1883	7	No, . .	1,450	. . . . .	300
No, .	1	92	30	30	June 8	Sept. 8, 1883	92	No, . .	4,050	. . . .	1 600
Yes, .	16	110	1,142	1 142	July 2	Oct. 20, 1883	110	No, . .	131,558	. . . . .	82 110
Yes, .	1	105	112	112	July 2	Oct. 15, 1883	105	No, . .	13,709	. . .	15,000
No, .	1	14	100	100	July 2	July 16 1883	14	No, . .	1,980	. . . . .	300
Yes, .	1	14	250	250	July 2	July 16, 1883	14	Yes, . .	6,000	. . . . .	400
No, .	1	49	50	50	July 14	Sept. 1, 1883	49	No, . .	3 600	. . . . .	2,200
No, .	1	123	150	150	July 17	Nov. 17, 1883	123	No, . .	27.000	. . . .	4,000
No, .	1	14	75	75	July 25	Aug. 8, 1883	14	No, . .	1,980	. . . .	300
No, .	3	13	640	640	August 3	Aug. 16, 1883	13	No, . .	10,912	. . . .	1,500
Yes. .	1	61	305	350	Sept. 1	Nov. 1, 1883	61	No, . .	10 000	350	5,000
Yes, .	1	61	475	500	Sept. 1	Nov. 1, 1883	61	No,	20.000	250	7,500
Yes, .	1	42	48	50	Sept. 10	Oct. 22, 1883	42	No, . .	2 880	. . .	. . .
Yes, .	1	14	160	160	Sept. 15	Sept. 29, 1883	14	Yes, . .	3,744		200
Yes, .	1	213	125	125	Sept. 18	April 18 1884	213	No, . .	34.125	1,000	2 000
No, .	1	7	95	563	Oct. 16	Oct. 23, 1883	7	No, . .	3.314	.	1,000
Yes, .	31	29	3,565	3,565	Oct. 22	Nov. 20, 1883	29	No, .	218,356	3,090	11.025
No, .	1	38	80	293	Nov. 1	Dec. 9, 1883	38	No, . .	6,000	800	2 000
Yes, .	1	30	150	150	Nov. 27	Dec. 27, 1883	30	No, .	8 820	. . . .	400
No,	1	7	68	68	Dec. 13	Dec. 20, 1883	7	No, .	775	. . . .	400
Yes, .	15	28	1 860	1,860	Dec. 20	Jan. 17, 1884	28	No, .	92 888		6 225
Yes, .	2	93	320	320	Dec. 22	Mar. 24, 1884	93	No, .	38 976	2 000	5,000
No, .	1	. . .	100	100	Aug. 1	Aug. 8, 1883	7	No,	885	. . . . .	. . . . .
Yes, .	3	. . .	99	99	April 21	June 16, 1883	56	No, . .	7,038	. . . .	9,800

INDUSTRIES AND YEARS.	LOCALITY.	CAUSE OR OBJECT.
1883.		
Shipbuilding, &c.		
Carpenters and caulkers,	Philadelphia,	For increase of wages and reduction of hours.
Tobacco.		
Cigarmakers,	Philadelphia,	For increase of wages,
Cigarmakers,	Pittsburgh,	For increase of wages,
Cigarmakers,	Pittsburgh and Wilkes-Barre.	For increase of wages,
Cigarmakers,	Pittsburgh,	For increase of wages,
Cigarmakers,	Pittsburgh,	For increase of wages,
Cigarmakers,	Erie,	For increase of wages,
Cigarmakers,	Corry,	For increase of wages,
Employees, oil cloth factory,	Philadelphia,	For change of rules,
1884.		
Boots and Shoes.		
Employees,	Philadelphia,	Against discharge of one employee,
Employees,	Philadelphia,	For discharge of forewoman and against team system of working.
Employees,	Philadelphia,	For re-instatement of one discharged employee.
Brick.		
Moulders,	Reading,	For increase of wages,
Building Trades.		
Plasterers,	Philadelphia,	For increase of wages,
Carpeting.		
Weavers, Brussels,	Philadelphia,	Against reduction of wages,
Weavers, ingrain,	Philadelphia,	Against reduction of wages,
Weavers, ingrain,	Philadelphia,	Against reduction of wages,
Weavers, ingrain,	Philadelphia,	Against reduction of wages,
Weavers, ingrain,	Philadelphia,	Against reduction of wages,
Weavers, ingrain,	Philadelphia,	Against reduction of wages,
Weavers, ingrain,	Philadelphia,	Against reduction of wages,
Clothing.		
Tailors,	Philadelphia,	Against reduction of wages,
Ironers, shirt factory,	Philadelphia,	Against introduction of ironing machines.
Furniture.		
Carvers,	Philadelphia,	Against employment of one non-union man.
Glass.		
Blowers, flint glass works,	Pittsburgh,	Against reduction of wages,
Blowers, flint glass works,	Sharpsburg,	Against reduction of wages,
Blowers, flint glass works,	Parker,	Against reduction of wages,
Blowers, flint glass works,	Tarentum,	For increase of wages,
Blowers and finishers,	Pittsburgh,	Against reduction of force,
Metals and Metallic Goods.		
Puddlers, iron and steel works,	Danville,	Against reduction of wages,
Puddlers, iron and steel works,	Milton,	Against reduction of wages,
Puddlers, nail works,	Danville,	Against reduction of wages,
Moulders, hardware factory,	Reading,	Against reduction of wages,
Moulders, stove foundry,	Lebanon,	Against reduction of wages,
Moulders, stove foundry,	Reading,	Against reduction of wages,
Moulders, stove foundry,	Royersford,	Against reduction of wages,
Puddlers, iron works,	Pottsville,	Against reduction of wages,
Puddlers, iron works,	Pittsburgh,	Against poor quality of material,
Employees, iron furnace,	New Castle,	For increase of wages,
Employees, iron furnace,	New Castle,	For increase of wages,
Employees, iron furnace,	New Castle,	For increase of wages,
Laborers, iron works,	Pittsburgh,	Against reduction of wages,
Moulders, stove foundry,	Pittsburgh,	Against reduction of wages,
Moulders, stove foundry,	Allegheny,	Against reduction of wages,
Moulders, stove foundry,	Allegheny,	Against reduction of wages,
Moulders, stove foundry,	Beaver Falls,	For increase of wages,
Employees, iron works,	Apollo,	Against discharge of five union employees.
Employees, steel works,	Beaver Falls,	For re-instatement of three discharged employees.

STRIKES—Continued.

Ordered by labor organization.	Establishment. Number.	Establishment. Days closed.	Number of persons engaged in strike.	Number of persons involved in strike.	Beginning.	End.	Duration—days.	Succeeded.	Employees. Loss.	Employees. Assistance.	Employers' loss.
Yes, .	1	49	80	90	April 21	June 9, 1883	49	No, . .	$9,450	. . . . .	$6,000
No, .	1	7	92	92	April 14	May 12, 1883	28	No, . .	300	. . . . .	. . . . .
Yes, .	1		15	15	May 1	May 28, 1888	27	Yes,	630	. .	1,000
Yes, .	4	7	34	50	May 1	May 8, 1883	7	Yes, . .	422	$110	300
Yes,	1	. . .	40	45	May 1	May 15, 1883	14	Yes, . .	840	. . . . .	300
Yes, .	1	. . .	30	30	May 1	Aug. 1, 1883	92	Yes, . .	3,000	. . .	1,000
Yes, .	7	. . .	21	21	May 7	May 14, 1883	7	Yes, . .	179	84	. . . . .
Yes, .	1	. . .	8	8	May 14	June 9, 1883	36	No, . .	120	39	. . . . .
No, .	1	. . .	220	220	Nov. 28	Dec. 7, 1883	9	No, . .	3,000	. . . . .	. . . . .
Yes, .	1	7	75	75	June 26	July 3, 1884	7	Yes, . .	600	. . . .	200
Yes, .	1	14	37	37	July 14	July 28, 1884	14	Partly,	750	. . . .	250
No, .	1	7	65	65	Dec. 31	Jan. 7, 1885	7	Yes, . .	500	. . . .	500
No, .	1	9	15	65	Aug. 6	Aug. 15, 1884	9	Yes, . .	598	. . . . .	250
Yes, .	65	9	800	1,100	July 7	July 16, 1884	9	Yes, . .	25,000	. . . . .	30,000
Yes, .	1	11	10	40	May 12	May 23, 1884	11	Yes, . .	590	. .	650
No, .	19	.	1,088	2,115	Nov. 20	April 21, 1885	152	Partly,	311,971	13,000	123 700
No, .	1	30	56	70	Nov. 20	Dec. 20, 1884	30	No, .	1,800	. . . .	500
No, .	1	. . .	23	33	Nov. 20	Feb. 1, 1885	73	Yes,	3,465	. . . . .	1,500
No, .	1	. . .	36	70	Nov. 20	Dec. 5, 1884	15	No, . .	520	. . . .	200
No, .	1	.	29	29	Nov. 20	Dec. 5, 1884	15	No, . .	570	. . . .	150
No, .	1	14	12	20	Nov. 20	Dec. 4, 1884	14	Yes,	350	. . . . .	40
Yes, .	1	. .	18	18	April 5	April 19, 1884	14	Yes, . .	500	100	200
Yes, .	1	. .	60	60	Dec. 1	Dec. 15, 1884	14	No, . .	900	. . . .	100
Yes, .	1	. . .	12	12	Sept. 20	Oct. 1, 1884	11	Yes, . .	240	. . . . .	200
Yes, .	2	. .	138	370	Dec. 10	July 10, 1885	212	Partly,	50,000	7,000	. . . . .
Yes, .	1		42	125	Dec. 10	Dec. 17, 1885	372	Partly,	44.000	2,400	. . . . .
Yes, .	1	301	24	85	Dec. 18	Oct. 15, 1885	301	Partly,	26,000	1,000	500
Yes, .	1	22	24	150	Dec. 23	Jan. 14, 1885	22	Yes, .	2.933	468	300
Yes, .	1	. . .	100	250	Dec. 24	Jan. 15, 1885	22	No, .	7,875	. . .	500
Yes, .	1		70	333	Jan. 1	Sept. 1, 1884	244	No, .	56,000	800	25,000
No, .	1	91	24	93	Jan. 1	April 1, 1884	91	No, . .	7,600	300	5,000
Yes, .	1	42	16	190	Jan. 7	Mar. 27, 1884	80	Yes, . .	9,000	. .	5,000
No, .	1	30	134	600	Jan. 15	Feb. 14, 1884	30	No, .	16,800	1,000	5,000
No, .	1	14	20	30	Jan. 16	Jan. 30, 1884	14	No, . .	550	. . . .	200
No, .	1	. . .	15	15	Jan. 18	Jan. 25, 1884	7	No, . .	280	. .	100
Yes, .	1	. . .	56	65	Feb. 1	May 1, 1884	90	No, .	9,800	5,992	8,500
No, .	1		45	150	Feb. 19	Mar. 10, 1884	20	Yes, . .	3 800	.	1,500
No, .	1	14	116	200	Mar. 8	Mar. 22, 1884	14	Yes, . .	5,160	. . . . .	300
No, .	1	10	95	95	April 15	April 25, 1884	10	No, . .	1,425	. . . . .	1,000
No, .	1	11	77	77	April 15	April 26, 1884	11	No, .	1,271	. . . . .	800
No .	1	12	300	300	April 15	April 27, 1884	12	No, .	5,400	. . . .	2,000
No, .	1	7	150	425	April 25	May 2, 1884	7	Yes, . .	4 500	. . . .	300
Yes, .	1	49	40	70	June 1	July 19, 1884	49	No, . .	6,458	150	1,200
Yes, .	3	21	73	110	June 1	June 22, 1884	21	No, .	4 455	475	3,300
Yes, .	2	7	42	70	June 1	June 8, 1884	7	No, . .	945	250	700
Yes, .	1	27	18	30	June 1	June 28, 1884	27	No, . .	1,462	50	200
Yes, .	1	. . .	150	150	June 1	June 23, 1884	22	Yes, . .	5,670	. . . . .	2,000
Yes, .	1	7	350	500	July 1	Aug. 30, 1884	60	No, . .	28,000	3,500	35,000

STATISTICS OF

INDUSTRIES AND YEARS.	LOCALITY.	CAUSE OR OBJECT.
1884.		
Metals and Metallic Goods.		
Nailers, nail works,	Sunbury,	Against reduction of wages,
Employees, stove foundry,	New Castle,	Against reduction of wages,
Nut feeders, iron works,	Pittsburgh,	Against reduction of wages,
Employees, axle works,	Allegheny,	Against reduction of wages,
Mining.		
Miners, &c., coal,	West Elizabeth,	Against reduction of wages,
Miners, &c., coal,	Irwin,	Against reduction of wages,
Miners, &c., coal,	Dagus,	Against reduction of wages,
Miners, &c., coal,	East Brady,	For increase of wages,
Miners, &c., coal,	Western Pennsylvania,	Against reduction of wages,
Miners, &c., coal,	Lackawanna,	For increase of wages,
Miners, &c , coal,	Western Pennsylvania,	For increase of wages,
Miners, &c., coal,	Brownsville,	For increase of wages,
Miners, &c., coal,	Courtney,	For increase of wages,
Miners, &c., coal,	Pittsburgh,	Against reduction of wages,
Miners, &c., coal,	Jeddo and Highland,	Against signing contract allowing the firm to pay any bill presented against them.
Miners, &c., coal,	Carbondale,	For payment by the ton instead of the car.
Miners, &c., coal,	Courtney,	Against reduction of wages,
Miners, &c., coal,	Western Pennsylvania,	For increase of wages,
Miners, &c., coal,	New Castle,	Against change from bi-weekly to monthly payments.
Miners, &c., coal,	Allegheny City,	Against reduction of wages,
Miners, &c., coal,	Pittsburgh,	To pay for the broken bushel, and for cutting clay cars.
Miners, &c., coal,	Sallsbury,	For increase of wages,
Tobacco.		
Cigarmakers,	Philadelphia,	Against reduction of wages,
Cigarmakers,	Philadelphia,	Against reduction of wages,
Woolen Goods.		
Weavers,	Philadelphia,	Against reduction of wages,
1885		
Building Trades.		
Bricklayers,	Wilkes-Barre,	For reduction of hours,
Clothing.		
Tailors,	Philadelphia,	In sympathy with strike elsewhere,
Cotton Goods.		
Weavers, damask,	Frankford,	For increase of wages,
Weavers,	Conshohocken,	For increase of wages,
Weavers,	Philadelphia,	For increase of wages,
Weavers, gingham,	Frankford,	For increase of wages,
Weavers, gingham,	Frankford,	For discharge of foreman,
Cotton and Woolen Goods.		
Weavers,	Philadelphia,	For increase of wages,
Weavers,	Glen Riddle,	Against reduction of wages,
Weavers,	Philadelphia,	For increase of wages,
Weavers, broad loom,	Philadelphia,	For increase of wages,
Weavers,	Philadelphia,	For increase of wages,
Weavers,	Philadelphia,	For increase of wages,
Spinners,	Glen Riddle,	For increase of wages,
Glass.		
Blowers, flint glass works,	Pittsburgh,	For increase of wages,
Blowers and gatherers, bottle glass works.	Pittsburgh,	Against reduction of wages,
Blowers, flint glass works,	Philadelphia,	For adoption of new scale of prices,
Leather and Leather Goods.		
Finishers, morocco factory,	Philadelphia,	For reduction of daily tasks,
Tanners, morocco factory,	Philadelphia,	For increase of wages,
Beam hands and helpers, morocco factory.	Frankford,	Against change from day to piece work.

STRIKES—Continued.

Ordered by labor organization.	Establishment. Number.	Establishment. Days closed.	Number of persons engaged in strike.	Number of persons involved in strike.	Beginning.	End.	Duration—days.	Succeeded.	Employees. Loss.	Employees. Assistance.	Employers' loss.
No,	1	..	10	40	July 3	July 17, 1884	14	No, ..	$650	....	$200
Yes,	1	83	75	75	July 8	Oct. 30, 1884	83	No, ..	12,960	....	500
No,	1	94	16	55	Oct. 13	Jan. 15, 1885	94	No, ..	9.737	.....	
No,	1	14	173	173	Dec. 13	Jan. 10, 1885	28	No, ..	5,000	....	1,200
Yes,	1	77	195	195	Mar. 31	June 16 1884	77	No, .	23.888	$1,000	5 000
No,	1	13	440	440	April 17	April 30, 1884	13	Partly,	8,470	....	500
Yes,	1	33	620	620	May 1	June 3, 1884	33	No, ..	22,000	..	5 000
Yes,	1	52	135	135	May 10	July 1, 1884	52	No, ..	8,000	200	6 000
Yes,	17	20	1,745	1 745	May 27	June 16, 1884	20	No, ..	58,632	..	9.575
No,	1	35	170	170	June 1	July 6, 1884	35	No, ..	6,452	.....	800
Yes,	9	70	6,926	6 926	June 16	Aug. 25 1884	70	No, .	47,439	....	9 850
Yes,	2	30	173	173	June 16	July 16 1884	30	No, ..	7 266	....	2,250
Yes,	1	14	137	137	June 16	June 30. 1884	14	No, ..	3 452	....	500
No,	4	7	515	515	July 8	July 15, 1884	7	No, .	6 026	..	575
No,	1	31	800	800	July 18	Aug. 18, 1884	31	Yes, .	20,000	2,000	6 000
No,	1	38	60	295	Aug. 18	Oct. 15, 1884	58	Yes, ..	8,000	500	2,000
No,	1	14	140	140	Aug. 27	Sept. 10, 1884	14	No, .	3 528	.....	200
Yes,	9	70	753	753	June 16	Aug. 25, 1884	70	No, ..	47.439	.....	9 800
No,	1	7	52	52	Sept. 15	Sept. 22, 1884	7	No, .	499	....	100
No,	1	8	20	23	October 26	Nov. 3, 1884	8	No,	287	.	40
No,	1	87	60	60	Dec. 15	Mar. 12, 1885	87	Yes, .	5 000	600	1 000
No,	3	17	250	450	Dec. 15	Jan. 1, 1885	17	Yes, .	5,625	....	2 250
Yes,	1	...	40	40	Feb. 7	April 7, 1884	60	Yes,	3 200	229	5,000
Yes,	1	...	...	....	Dec. 13	Jan. 3, 1885	21	Yes, .	800	155	.
No,	1	...	58	58	Nov. 10	Nov. 17, 1884	7	No, .	505	.. .	250
Yes,	3	...	30	50	May 19	June 18, 1885	30	No, .	2,000	200	600
Yes,	1	.	66	66	April 2	Oct. 3, 1885	184	No, .	5 000	3,200	7,000
No,	1	49	60	145	Feb. 23	April 13. 1885	49	Yes, .	9 386	....	2 800
No,	2	25	92	243	May 20	June 14, 1885	25	No, ..	4 400	.....	1 500
No,	1	14	100	125	May 22	June 20, 1885	29	No, .	3,000	....	700
No,	1	11	34	49	Sept. 18	Sept. 29, 1885	11	Yes, ..	714	...	250
No,	1	25	34	49	Oct. 19	Nov. 13, 1885	25	No, .	1 749	...	450
No,	1		30	45	Jan. 1	Feb. 15, 1885	45	Yes, .	1,400	250	4 000
No,	1	...	38	38	March 3	Mar 10, 1885	7	No,	342	...	200
No,	1	23	29	35	April 3	April 26, 1885	23	Partly,	900	..	300
No,	1	...	176	250	May 12	June 1, 1885	20	Yes,	4,000	300	700
Yes,	1	13	209	400	October 8	Oct. 21, 1885	13	Partly,	4 500	600	2,000
No,	1	45	70	103	October 10	Nov. 24, 1885	45	Partly,	3 000	....	2 500
No,	1	7	17	400	October 16	Oct. 23, 1885	7	No, .	2 300	....	50
Yes,	1	7	45	220	Jan. 4	Jan. 11, 1885	7	Yes, ..	2,508	...	200
Yes,	1	.	15	32	June 20	July 26, 1885	36	Yes, ..	1,000	131	....
Yes,	2	32	22	318	October 5	Nov. 6, 1885	32	Yes, .	18,062	8 700	5,500
Yes,	1	.	14	18	May 26	June 9. 1885	14	No, ..	320	....	200
No,	1	14	10	56	June 27	Aug. 8, 1885	42	No, ..	1,200	.	1,500
No,	1	...	24	24	July 28	Aug. 4, 1885	7	No, ..	292	...	2,000

INDUSTRIES AND YEARS.	LOCALITY.	CAUSE OR OBJECT.
1885.		
Metals and Metallic Goods.		
Employees, barbed wire works,	Pittsburgh,	Against reduction of wages,
Nut feeders, iron works,	Pittsburgh,	Against reduction of wages,
Chainmakers and helpers,	Pittsburgh,	Against making certain style of chain.
Employees, iron works,	Pittsburgh,	Against reduction of wages,
Employees, iron works,	Pittsburgh,	Against reduction of wages,
Moulders, stove foundry,	Royersford,	Against reduction of wages,
Moulders, stove foundry,	Royersford and Spring City.	Against reduction of wages,
Employees, iron works,	Pittsburgh,	Against working three turns per day.
Moulders, hardware factory,	Philadelphia,	For increase of wages.
Nailers and feeders, nail works,	New Castle, Sharon and Pittsburgh.	Against reduction of wages,
Nailers and feeders, nail works,	New Castle and Sharon,	Against reduction of wages,
Moulders, iron foundry,	Philadelphia,	For increase of wages,
Horseshoers,	Philadelphia,	For increase of wages.
Heaters, rollers, shearmen, &c., iron works.	Western Pennsylvania,	Against reduction of wages,
Heaters, rollers, shearmen, &c., iron works.	Sharon,	Against reduction of wages,
Bundlers and shearmen, rolling mill,	Allegheny,	Against reduction of wages,
Moulders, iron works,	Philadelphia,	Against reduction of wages of one employee.
Welders and helpers,	Philadelphia,	For increase of wages,
Moulders, iron foundry,	Philadelphia,	For increase of wages,
Moulders, stove foundry,	Philadelphia,	For increase of wages,
Moulders and helpers, stove foundry,	Philadelphia,	For increase of wages,
Moulders, hardware factory,	Philadelphia,	Against allowing non-union men in a striking establishment to perform work in this shop.
Mining.		
Miners, &c., coal,	Mt. Carmel,	Against reduction of wages,
Miners, &c., coal,	Western Pennsylvania,	Against reduction of wages,
Miners, &c., coal,	Western Pennsylvania,	Against reduction of wages,
Miners, &c., coal,	Turtle Creek,	Against reduction of wages,
Miners, &c., coal,	Western Pennsylvania,	Against reduction of wages,
Miners, &c., coal,	Glendale,	Against reduction of wages,
Miners, &c., coal,	Western Pennsylvania,	For increase of wages,
Miners, &c., coal,	Western Pennsylvania,	For increase of wages,
Miners, &c., coal,	Western Pennsylvania,	For increase of wages,
Miners, &c., coal,	Irwin Station,	Against reduction of wages,
Miners, &c., coal,	Jeddo and Highlands,	For payment for dead work,
Miners, &c., coal,	Western District,	For increase of wages,
Miners, &c., coal,	Beaver Meadow,	Against reduction of wages,
Miners, &c., coal,	Pittsburgh,	Against supplying coal to mines in which strike was pending.
Miners, &c., coal,	Shamokin,	For increase of wages,
Miners, &c., coal,	Carbondale,	For change of rules and re-instatement of check weighman.
Miners, &c., coal,	Salisbury,	Against reduction of wages,
Drivers, &c., coal,	Mt. Carmel,	For increase of wages,
Miners, &c., coal,	Park Place,	Against reduction of wages,
Miners, &c., coal,	Shamokin,	For enforcement of mining law concerning the placing of timber.
Miners, &c., coal,	Western Pennsylvania,	For increase of wages,
Miners, &c., coal,	Western Pennsylvania.	For increase of wages,
Miners, &c., coal,	Coal Centre and Woods' Run.	For increase of wages,
Miners, &c., coal,	McKeesport,	For increase of wages,
Miners, &c., coal,	Allensport and Brownsville.	For increase of wages,
Miners, &c., coal,	Courtney,	For increase of wages,
Miners, &c., coal,	Coal Valley,	For increase of wages,
Miners, &c., coal,	Camden,	For increase of wages,
Miners, &c., coal,	Western Pennsylvania,	For increase of wages,
Miners, &c., coal,	Western Pennsylvania,	For increase of wages,
Miners, &c., coal,	Street's Run,	For increase of wages,
Miners, &c., coal,	Spiketown,	For increase of wages,
Miners, &c., coal,	Mansfield,	Against reduction of wages,
Public Ways Construction.		
Laborers, railroad,	Pottsville,	For increase of wages,
Stone Quarrying and Cutting.		
Stone cutters,	Philadelphia,	Against sub-contracting the work,

STRIKES—Continued.

Ordered by labor organization.	Establishment. Number.	Establishment. Days closed.	Number of persons engaged in strike.	Number of persons involved in strike.	Beginning.	End.	Duration—days.	Succeeded.	Employees. Loss.	Employees. Assistance.	Employers' loss.
Yes,	1	49	650	650	Jan. 1	Feb. 19, 1885	49	No,	$49,140	$1,500	$1,000
Yes,	2	7	18	70	Jan. 9	Jan. 16, 1885	7	No,	735		100
No,	1		30	30	Jan. 10	Jan. 24, 1885	14	No,	549		100
Yes,	1	51	250	250	Jan. 16	Mar. 8, 1885	51	Yes,	20,000		1,000
No,	1	7	250	500	Feb. 5	Feb. 19, 1885	14	No,	10,000		500
Yes,	1	12	17	40	March 13	Mar. 25, 1885	12	Yes,	880		150
Yes,	2		40	43	March 13	Mar. 25, 1885	12	Yes,	1,245		550
Yes,	1	21	300	300	April 4	April 25, 1885	21	No,	8,100	500	1,500
No,	1		22	26	April 21	May 1, 1885	7	No,	275		100
Yes,	8	393	609	805	May 28	June 25, 1886	393	No,	177,192	815	91,353
Yes,	2	61	125	155	May 28	July 28, 1885	61	Yes,	21,027		3 000
No,	1	13	30	63	June 1	June 14, 1885	13	Yes,	1,230		5,000
Yes,	1		34	34	June 1	June 15, 1885	14	Yes,	816		
Yes	21	16	390	15,600	June 1	June 17, 1885	16	Yes,	442,733	25,000	50,975
Yes,	3	92	50	865	June 1	Sept. 1, 1885	92	Yes,	148,395		18,750
Yes,	1		16	84	June 15	July 7, 1885	22	Partly,	3,175	50	200
No,	1		48	48	July 17	July 26, 1885	9	Yes,	930	80	200
No,	1		50	93	July 17	Nov. 17, 1885	123	Partly,	7,600	3,000	3 000
Yes,	1		20	20	Aug. 23	Oct. 23, 1885	61	Partly,	1,600	2,000	4,000
No,	1	13	100	125	Aug. 26	Sept. 8, 1885	13	Yes,	2,500		10,000
No,	1	7	86	150	Aug. 27	Sept. 3, 1885	7	Yes,	1,530		
Yes,	1		53	62	Aug. 28	Sept. 6, 1885	9	Yes,	1,194		500
No,	1		260	260	Jan. 5	Mar. 2, 1885	56	No,	12,500	1,000	2,000
No,	24	54	481	481	March 5	April 28, 1885	54	No,	344,298	4 015	84,920
No,	6	44	4,003	4,003	March 5	April 18 1885	44	No,	29 115	375	7,150
No,	1	33	190	190	March 5	April 12, 1885	38	No,	10,779	150	3,000
No,	3	21	305	305	March 5	Mar. 26, 1885	21	Yes,	10,047		1,900
No,	1	14	60	60	March 5	Mar. 19, 1885	14	Yes,	1,318		200
Yes,	59	29	7,272	7,272	March 9	April 7, 1885	29	Yes,	323,604		73,150
Yes,	7	11	504	504	March 9	Mar. 20, 1885	11	No,	8,971		1,800
No,	5	8	347	347	March 11	Mar. 19, 1885	8	No,	3.644		700
No,	1	47	750	750	March 15	May 1, 1885	47	No,	54,000	750	16,000
No,	4	49	390	820	April 1	June 20, 1885	80	No,	30,000	3,000	10.000
No,	5	21	338	338	April 7	April 28, 1885	21	No,	10,951		3,400
No,	1	37	100	400	April 9	July 1, 1885	83	No,	20,000	2,000	5,000
Yes,	1	8	110	110	April 20	April 28, 1885	8	Yes,	1,386		300
Yes,	1	92	580	580	May 1	Aug. 1, 1885	92	No,	35,500	3 000	10,000
No,	1	21	60	295	June 10	July 1, 1885	21	Yes,	3,000	500	1,000
No,	1	16	100	165	July 15	July 31, 1885	16	No,	2,475		600
No,	1	31	25	385	August 1	Sept. 1, 1885	31	No,	11,000		1 000
Yes,	1	82	210	440	August 16	Nov. 6, 1885	82	Yes,	25,000	2,000	10,000
No,	1	14	30	98	Sept. 2	Sept. 16, 1885	14	Yes,	1,040		150
No,	6	72	282	282	Sept. 4	Nov. 15, 1885	72	No,	22 208	10,000	4,500
No,	11	69	695	695	Sept. 4	Nov. 12, 1885	69	No,	51.083		12.600
No,	2	50	238	238	Sept. 4	Oct. 25, 1885	50	No,	13,745		2,000
No,	1	7	280	280	Sept. 13	Sept. 20, 1885	7	No,	1,155		
No,	2	28	104	104	Sept. 4	Oct. 2, 1885	28	Partly,	4,368		700
No,	1	87	110	110	Sept. 4	Dec. 1, 1885	87	No,	9,625		2 000
No,	1	101	270	270	Sept. 4	Dec. 14, 1885	101	No,	28 350		7,000
No,	1	99	200	200	Sept. 4	Dec. 12 1885	99	No,	20,300		4,000
Yes,	33	121	4,488	4,488	Sept. 4	Jan. 3, 1886	121	No,	549 780		124,800
No,	3	121	650	650	Sept. 4	Jan. 3 1886	121	Partly,	71,890		17,200
No,	1	111	230	230	Sept. 15	Jan. 3, 1886	111	Partly,	23.258		4 000
No,	1	111	140	140	Sept. 15	Jan. 3, 1886	111	No,	15.680		3,500
No,	1	14	200	200	Dec. 23	Jan. 6, 1886	14	Yes,	4,320		500
No,	1		200	200	June 1	June 14, 1885	13	No,	1 200		300
Yes,	1		12	12	April 13	April 27, 1885	14	No,	500	144	125

STATISTICS OF

INDUSTRIES AND YEARS.	LOCALITY.	CAUSE OR OBJECT.
1885.		
Tobacco.		
Cigarmakers,	Corry,	Against reduction of wages and the trick system.
Cigarmakers,	Corry,	Against reduction of wages and the trick system.
Transportation.		
Stevedores,	Philadelphia,	Against change of rules,
Wooden Goods.		
Wood turners, spool and bobbin factory.	Philadelphia,	For increase of wages,
Woolen Goods.		
Weavers,	Philadelphia,	Against reduction of wages,
Weavers,	Philadelphia,	For increase of wages,
Weavers,	Philadelphia,	For re-instatement of five discharged employees.
Loomfixers,	Philadelphia,	For increase of wages, &c.,
1886.		
Brewing.		
Employees, brewery,	Philadelphia,	Against employment of one non-union man.
Brick.		
Employees,	Philadelphia,	For increase of wages,
Clay diggers,	Nicetown,	For increase of wages,
Building Trades.		
Carpenters,	Pittshurgh,	For nine hours work with ten hours pay.
Plasterers,	Pittsburgh,	For nine hours work with ten hours pay.
Stone masons,	Pittshurgh,	For nine hours work with ten hours pay.
Carpenters,	Philadelphia,	For nine hours work with ten hours pay.
Roofers, tin,	Philadelphia,	For nine hours work with ten hours pay.
Plasterers,	Pittshurgh,	Against return to ten hour system,
Carpeting.		
Weavers, ingrain,	Philadelphia,	For increase of wages,
Weavers, ingrain,	Philadelphia,	For increase of wages,
Weavers, ingrain,	Philadelphia,	For increase of wages,
Weavers, ingrain,	Philadelphia,	For increase of wages,
Weavers, ingrain,	Philadelphia,	For increase of wages,
Weavers, ingrain,	Philadelphia,	For increase of wages,
Weavers, ingrain,	Philadelphia,	For increase of wages,
Weavers, ingrain,	Philadelphia,	For increase of wages,
Weavers, ingrain,	Philadelphia,	For increase of wages,
Weavers, ingrain,	Philadelphia,	For increase of wages,
Weavers, ingrain,	Philadelphia,	For increase of wages,
Weavers, ingrain,	Philadelphia,	For increase of wages,
Weavers, rug,	Philadelphia,	Against employment of one non-union man.
Weavers, rug,	Philadelphia,	Against employment of learners,
Weavers, ingrain,	Philadelphia,	For increase of wages,
Weavers, rug (weft),	Philadelphia,	Against reduction of wages,
Weavers, rug,	Bristol,	Against poor quality of material,
Weavers, ingrain,	Philadelphia,	For re-measurement of work,
Weavers, rug,	Bristol,	For increase of wages,
Weavers, ingrain,	Philadelphia,	For re-instatement of one discharged employee.
Weavers, ingrain,	Philadelphia,	Against learners doing weavers work.
Clothing.		
Finishers, wool hats,	Reading,	Against employment of additional apprentices.
Sewing machine operators, hosiery factory.	Germantown,	For increase of wages, &c.,
Cutters and trimmers, clothing,	Philadelphia,	For eight hours work with ten hours pay.
Finishers, hats,	Reading,	For adoption of association prices,

STRIKES—Continued.

Ordered by labor organization.	Establishment. Number.	Establishment. Days closed.	Number of persons engaged in strike.	Number of persons involved in strike.	Beginning.	End.	Duration—days.	Succeeded.	Employees. Loss.	Employees. Assistance.	Employers' loss.
Yes, .	1	. .	6	6	June 24	July 18, 1885	24	Partly,	$162	$48	$100
Yes, .	1	21	4	5	June 24	July 15, 1885	21	Partly,	90	12	. . . . .
No, .	1	. . .	230	230	March 23	April 13, 1885	21	No, . .	6,900	. . . . .	10,000
No, .	4	. . .	39	39	October 27	Jan. 21, 1886	85	No, . .	2,158	. . . . .	1,900
No, .	1	28	250	1,220	Feb. 1	Mar. 1, 1885	28	Yes, .	20,000	2 000	5,000
No, .	1	14	72	340	May 6	May 20, 1885	14	Yes, . .	4,000	200	1 250
Yes, .	1	.	145	160	July 20	June 16, 1886	331	Yes, . .	12,000	3,000	30,000
No, .	1	. . .	4	230	July 22	Aug. 22, 1885	31	No, . .	5,000	1,000	8,000
No, .	1	.	24	24	Sept. 23	Oct. 1, 1886	8	Yes, . .	317	. . . .	100
Yes, .	1	35	56	56	May 18	June 21, 1886	35	No, .	3 242	. . . . .	1,200
Yes, .	1	12	40	210	June 12	June 24, 1886	12	No, .	4,857	. . . . .	1,200
Yes, .	114	42	970	970	May 1	June 12, 1886	42	Partly,	87,420	2,000	50,120
Yes, .	18	11	95	146	May 3	May 14, 1886	11	Partly,	3 621	100	1,150
Yes, .	19	21	222	222	May 3	May 24 1886	21	Partly,	13,187	3,330	4,450
Yes, .	20	.	180	180	May 3	May 31, 1886	28	Yes,	11,000	3,300	4,000
Yes .	1	14	37	37	June 7	June 21, 1886	14	Partly,	1,250	200	2,500
Yes, .	18	63	101	148	June 21	Aug. 23, 1886	63	Yes, . .	18,302	1,000	6,450
No, .	10		227	301	Jan. 23	Feb. 20, 1886	28	Yes, . .	9,463	. . . . .	2,065
No, .	1	33	52	61	Jan. 23	Feb. 25, 1886	33	Yes, . .	4 774	. . . . .	800
No, .	1		78	106	Jan. 23	May 20, 1886	56	Yes, . .	3 528	. . . . .	500
No, .	1	. .	138	176	Jan. 23	Feb. 15, 1886	22	Yes, . .	2,000	. . . . .	. . . .
No, .	1	18	19	27	Jan. 25	Feb. 12, 1886	18	Yes, . .	567	. . . . .	80
No, .	1	.	20	25	Jan. 26	Feb. 15, 1886	20	Yes, . .	621	. . . .	480
No, .	1	46	26	31	Jan. 26	Mar. 13, 1886	46	Yes, . .	1.700	. .	300
Yes, .	1	. .	35	43	May 13	July 8, 1886	56	No, . .	6,500	700	200
Yes, .	1	. . .	60	80	May 18	Aug. 5, 1886	79	Yes, . .	4,800	. . . . .	6 000
Yes, .	1	. . .	19	27	May 24	May 31, 1886	7	Yes, . .	155	. . . . .	60
Yes, .	2	. . .	20	25	May 24	July 19, 1886	56	Yes, .	3,757	. . . . .	1 800
No, .	1	. .	26	31	June 4	July 25, 1886	51	Partly,	1,300	. . . . .	1,200
No, .	1	. . .	80	250	July 9	Aug. 5, 1886	27	No, . .	9,500	. . . . .	500
No, .	1	.	467	908	July 10	July 27, 1886	12	No, . .	12,500	. . . .	1,000
No, .	1	23	17	26	July 12	Aug. 4, 1886	23	Yes, . .	750	. . . . .	250
Yes, .	1	37	6	24	July 17	Aug. 23, 1886	37	Yes, . .	1 328	300	300
No, .	1	. . .	50	75	July 16	Aug. 31, 1886	14	No, . .	1,500	. . . . .	300
No, .	1	. .	14	14	August 10	Aug. 24, 1886	14	No, . .	252	. . . . .	75
No, .	1	.	34	39	August 21	Aug. 31, 1886	10	No, . .	575	. . . . .	250
No, .	1	7	14	18	August 27	Sept. 3, 1886	7	Yes, . .	725	. . . . .	250
No, .	1	10	40	80	Dec. 13	Dec. 23, 1886	10	No, . .	1,088	. . . . .	350
Yes, .	1	. .	14	14	Jan. 2	May 1, 1886	109	No, .	2,000	500	500
No, .	1	. . .	20	65	March 1	Mar. 29, 1886	28	No, .	1,000	. . . . .	500
Yes, .	51	. .	780	8,760	May 10	May 17, 1886	7	Partly,	65,100	. . . . .	32,000
Yes, .	5	16	94	503	May 15	May 31, 1886	16	No, . .	6,530	650	2,050

STATISTICS OF

INDUSTRIES AND YEARS.	LOCALITY.	CAUSE OR OBJECT.
1883.		
Clothing.		
Tailors, journeymen,	Pittsburgh,	For increase of wages,
Knitters, hosiery factory,	Germantown,	For increase of wages,
Boarders, hosiery factory,	Frankford,	For increase of wages,
Knitters, hosiery factory,	Philadelphia,	Against reduction of wages,
Shirtmakers,	Philadelphia,	For re-instatement of one discharged employee.
Knitters, hosiery factory,	Bristol,	For increase of wages, &c.,
Cooperage.		
Coopers,	Pittsburgh.	Against reduction of wages,
Coopers, oil barrels,	Philadelphia,	Against employment of additional apprentices.
Cotton Goods.		
Weavers,	Philadelphia,	For increase of wages,
Weavers, Turkish towels,	Frankford,	Against employment of a learner,
Carders,	Frankford,	For increase of wages.
Weavers,	Frankford,	For increase of wages and discharge of foreman.
Weavers, damask factory,	Nicetown,	For re-instatement of three discharged employees.
Employees, print works,	Eddystone,	For re-instatement of one discharged employee.
Cotton and Woolen Goods.		
Weavers, damask,	Philadelphia,	For increase of wages,
Employees,	Clifton Heights,	For re-instatement of one employee,
Employees,	Ashton Mills,	Against being compelled to trade at company's store.
Employees,	Clifton Heights,	For recognition of union,
Weavers, alpaca mills,	Philadelphia,	For increase of wages,
Weavers, damask,	Philadelphia,	For increase of wages,
Weavers, damask.	Philadelphia,	For increase of wages,
Weavers and winders,	Philadelphia,	For discharge of one employee,
Food Preparations.		
Bakers,	Pittsburgh and Allegheny,	For reduction of hours,
Furniture.		
Cabinetmakers,	Philadelphia,	For increase of wages,
Cabinetmakers, &c.,	Pittsburgh,	For eight hours work with ten hours pay.
Cabinetmakers, &c.,	Pittsburgh,	For eight hours work with ten hours pay.
Cabinetmakers, &c.,	Pittsburgh,	For eight hours work with ten hours pay.
Employees,	Pittsburgh,	For eight hours work with ten hours pay.
Employees,	Pittsburgh,	For eight hours work with ten hours pay.
Cabinetmakers,	Allegheny,	For eight hours work with ten hours pay.
Cabinetmakers,	Philadelphia,	For reduction of hours,
Cabinetmakers,	Philadelphia,	For reduction of hours,
Cabinetmakers,	Philadelphia,	For reduction of hours,
Cabinetmakers,	Philadelphia,	For reduction of hours,
Cabinetmakers,	Philadelphia,	For reduction of hours,
Cabinetmakers,	Philadelphia,	For reduction of hours,
Cabinetmakers,	Philadelphia,	For reduction of hours,
Cabinetmakers,	Philadelphia,	For reduction of hours,
Cabinetmakers,	Allegheny,	Against return to ten hour system,
Cabinetmakers,	Allegheny,	Against return to ten hour system,
Gas and Coke.		
Miners, chargers, &c , coke works,	Connellsville,	For increase of wages,
Miners, chargers, &c., coke works,	Connellsville,	For increase of wages,
Miners, chargers, &c., coke works,	South-West,	For increase of wages,
Miners, chargers, &c., coke works,	Mayfield,	For increase of wages,
Miners, chargers, &c., coke works,	Connellsville,	For increase of wages,
Miners, chargers, &c., coke works,	Morrell, Wheeler and Mahoning.	For increase of wages,
Miners, chargers, &c., coke works,	Dunbar,	For increase of wages,
Miners, chargers, &c., coke works,	Jimtown,	For increase of wages,
Miners, chargers, &c., coke works,	West Leisenring,	For increase of wages,
Miners, chargers, &c , coke works,	Sterling,	For increase of wages,
Drawers, coke works,	Hecla,	For discharge of foreman,

STRIKES—Continued.

Ordered by labor organization.	Establishment: Number.	Establishment: Days closed.	Number of persons engaged in strike.	Number of persons involved in strike.	Beginning.	End.	Duration—days.	Succeeded.	Employees: Loss.	Employees: Assistance.	Employers' loss.
Yes, .	18	.	232	403	May 19	June 3, 1886	15	No, . .	$8,879	. . . . .	$10,623
No,	1	. . .	9	9	May 25	June 12, 1886	. . .	. . . .	. . . .	. . . . .	. .
No, .	1	16	23	265	July 22	Sept. 7, 1886	47	Partly,	7,000	. . . . .	5 000
No, .	1	13	6	100	August 4	Aug. 17,	13	Yes, . .	1,440	. . . .	500
No, .	1	. . .	222	222	Sept. 25	Nov. 6, 1886	42	No, . .	9,500	. . . . .	2,000
No, .	1	. . .	25	25	Nov. 15	Jan. 10, 1887	56	No, . .	2,500	600	1 000
No, .	1		28	28	June 15	Aug. 1, 1886	47	No, . .	2,016	. . . . .	300
No, .	1	16	223	223	October 30	Nov. 15, 1886	16	No, .	4,900	. . . .	. . . .
Yes, .	1	77	50	99	April 11	June 28, 1886	77	Partly,	3 000	500	1,000
No, .	1	. . .	8	8	July 24	July 31, 1886	7	No, . .	64	. .	50
No, .	1	.	7	25	July 26	Aug. 10, 1886	15	No, . .	300	. .	100
No, .	1	28	90	128	Sept. 4	Oct. 30, 1886	56	No, .	5,472	750	5 000
No, .	1	. . .	40	70	October 15	Nov. 10, 1886	26	No, . .	1,500	300	3 000
No, .	1	. . .	535	535	October 25	Nov. 15, 1886	21	No, . .	6 400	2 100	2 000
No, .	1	42	45	97	April 1	May 13, 1886	42	Yes, . .	4.000	. . . . .	500
Yes, .	1	21	200	200	April 12	May 3, 1886	21	No, . .	3 700	. .	3 500
Yes, .	1	14	462	462	May 7	May 21, 1886	14	Yes, . .	6,400	5,000	1,500
Yes, .	1	33	200	200	May 14	June 16, 1886	33	No, . .	5.100	1,000	5 000
No, .	1	11	40	51	May 17	May 28, 1886	11	No, . .	660	. . .	. . .
No, .	1	. .	22	22	July 16	Aug. 10, 1886	25	Yes, . .	1 942	. . . .	750
No, .	1		50	75	May 20	June 3, 1886	14	No, . .	350	. . . .	200
No, .	1	12	54	58	August 27	Sept. 8, 1886	12	No, .	750	. . . .	200
Yes, .	37	.	101	101	May 7	May 14, 1886	7	No, . .	761	. . . .	3 275
No, .	1		20	20	March 8	Mar. 22 1886	14	No, . .	480	. . . . .	250
Yes, .	3	14	82	82	May 1	May 15, 1886	14	Yes, . .	1,850	. . . . .	1 100
Yes, .	1	7	8	8	May 1	May 8, 1886	7	Yes, . .	96	. . . .	50
Yes, .	1	60	15	15	May 1	July 1, 1886	61	No, . .	1,500	. . . . .	900
Yes,	1	21	16	16	May 1	May 22, 1886	21	No, . .	600	. . . .	600
Yes, .	1	41	14	14	May 1	June 11, 1886	41	No, . .	1 000	. . . .	400
Yes, .	2	7	148	148	May 1	May 8, 1886	7	Yes, . .	1 680	. . . .	1,200
Yes, .	3	. . .	16	23	May 3	June 1, 1886	29	No, . .	844	134	800
Yes, .	2	. . .	23	40	May 3	June 7, 1886	35	No, . .	1 420	276	1 500
Yes, .	5	. .	86	89	May 3	June 14, 1886	42	No,	4.791	1,242	6 100
Yes, .	7	.	63	198	May 3	June 14 1886	42	No, . .	7.954	1 250	10 000
Yes, .	6	. .	94	173	May 3	June 14 1886	42	No,	8 492	1,317	8 850
Yes, .	1	. . .	5	5	May 3	May 17, 1886	14	No, . .	90	. . .	200
Yes, .	1	. .	17	17	May 3	June 18, 1886	46	No, . .	800	214	1,500
Yes, .	1		12	12	May 10	June 14 1886	35	No, . .	720	87	. .
Yes, .	1	7	25	25	May 22	May 29, 1886	7	No, .	278	. . . .	200
Yes, .	1	7	123	130	May 22	May 29, 1886	7	No, . .	1,402	. . . .	1 000
No, .	3	39	780	780	Jan. 14	Feb. 22, 1886	39	Yes, . .	36 036	310	6 600
No, .	43	37	3,583	3,583	Jan. 16	Feb. 22, 1886	37	Yes,	154 505	1,486	46,980
No, .	1	35	190	190	Jan. 18	Feb. 22, 1886	35	Yes, . .	7,980	75	1,800
No,	1	34	33	33	Jan. 19	Feb 22, 1886	34	Yes, . .	1.310	15	400
No, .	6	33	1,395	1,395	Jan. 20	Feb. 22, 1886	33	Yes, . .	52,871	575	11.600
Yes, .	1	48	450	462	Jan. 22	Mar. 11, 1886	48	Yes, . .	20,000	500	10,000
No, .	1	27	40	40	Jan. 26	Feb. 22, 1886	27	Yes,	1.285	12	400
No, .	1	25	240	240	Jan. 28	Feb. 22, 1886	25	Yes, . .	7.896	75	1,200
No, .	1	23	390	390	Jan. 30	Feb. 22, 1886	23	Yes,	10 920	125	2,000
No, .	1	18	100	100	Feb. 4	Feb. 22, 1886	18	Yes,	2 100	25	500
No, .	1	8	65	250	July 23	July 31 1886	8	No, . .	3 325	. . .	500

STATISTICS OF

INDUSTRIES AND YEARS.	LOCALITY.	CAUSE OR OBJECT.
1886.		
Glass.		
Blowers and apprentices,	Hawley,	Against increase of apprentices and reduction of wages.
Blowers, bottle glass works,	Philadelphia,	Against increase of apprentices and reduction of wages.
Blowers,	Bridesburg,	Against increase of apprentices and reduction of wages.
Blowers and apprentices, bottle glass works.	East Stroudsburg,	Against increase of apprentices and reduction of wages.
Blowers and apprentices,	Hawley,	Against employment of additional apprentices.
Employees, hydraulic engine works,	Philadelphia,	For increase of wages.
Metals and Metallic Goods.		
Furnacemen, &c., steel works,	Braddock,	For increase of wages and reduction of hours.
Laborers, iron works,	Pittsburgh,	For increase of wages,
Puddlers, iron plate works,	Coatesville,	For increase of wages,
Employees, tubular works,	McKeesport,	For increase of wages,
Puddlers and helpers, iron works,	Hollidaysburg,	For discharge of one non-union man.
Employees, iron works,	Kittanning,	For increase of wages,
Laborers, iron works,	Pittsburgh,	For increase of wages,
Employees, brass foundry,	Pittsburgh,	For reduction of hours,
Boltmakers, carriages, bolt works,	Philadelphia,	For increase of wages,
Boltmakers, carriages, bolt works,	Philadelphia,	For increase of wages,
Employees, bolt works,	Philadelphia,	For increase of wages,
Employees bolt works,	Philadelphia,	For increase of wages,
Moulders, stove foundry,	Reading,	Against employment of two non-union men,
Employees, nail works,	Philadelphia,	For increase of wages,
Employees, rolling mill,	Philadelphia,	For increase of wages,
Employees, rolling mill,	Philadelphia,	For increase of wages,
Employees, iron plate works,	Philadelphia,	For increase of wages,
Employees, iron works,	Scottdale,	For adoption of association prices,
Puddlers, iron works,	Columbia,	For increase of wages and re-instatement of two discharged employees,
Puddlers, iron works,	Columbia,	For increase of wages,
Puddlers, iron works,	Columbia,	For increase of wages,
Puddlers, iron works,	Sunbury,	For increase of wages,
Puddlers and helpers, iron works,	Hollidaysburg,	For discharge of one employee,
Melters and helpers, steel works,	Pittsburgh,	For increase of wages,
Surgical instrument makers,	Philadelphia,	For discharge of foreman,
Moulders, stove foundry,	Royersford,	For increase of wages,
Puddlers, nail works,	Harrisburg,	For increase of wages,
Puddlers, iron works,	Harrisburg,	For increase of wages,
Puddlers and helpers, iron works,	Lebanon,	For increase of wages,
Puddlers and helpers, iron works,	Lebanon,	For increase of wages,
Puddlers and helpers, iron works,	Lebanon,	For increase of wages,
Moulders, stove foundry,	Philadelphia,	For increase of wages,
Moulders, stove foundry,	Philadelphia,	For increase of wages,
Moulders, stove foundry,	Philadelphia,	For increase of wages,
Moulders, stove foundry,	Philadelphia,	For increase of wages,
Moulders, stove foundry,	Middletown,	For increase of wages,
Moulders, stove foundry,	Spring City,	For increase of wages,
Moulders, stove foundry,	Royersford,	For increase of wages
Moulders, stove foundry,	Philadelphia,	For increase of wages,
Feeders, nail works,	Sharon and New Castle,	For increase of wages,
Melters and helpers, steel works,	Tacony,	For increase of wages,
Employees, iron furnace,	Pittsburgh,	Against employment of one non-union man on the "turn gang,"
Employees, gas fixture factory,	Philadelphia,	Against violation of agreement to reduce honrs.
Employees, iron plate works,	Coatesville,	For increase of wages,
Puddlers, rolling mill,	Coatesville,	For increase of wages,
Puddlers, iron and steel works,	Coatesville,	For increase of wages,
Employees, stove foundry,	Pittsburgh,	For equalization of pay,
Mining.		
Miners, &c., coal,	Williamstown,	For increase of wages,
Miners, &c, coal,	St. Mary's,	For increase of wages,
Miners, &c, coal,	Irwin Station,	For increase of wages,
Miners, &c., coal,	Irwin Station,	For increase of wages,
Miners, &c., coal,	Center and Clearfield counties.	For increase of wages,

STRIKES—Continued.

Ordered by labor organization.	Establishment. Number.	Establishment. Days closed.	Number of persons engaged in strike.	Number of persons involved in strike.	Beginning.	End.	Duration—days.	Succeeded.	Employees. Loss.	Employees. Assistance.	Employers' loss.
Yes,	1	71	37	90	Sept. 1	Nov. 11, 1886	71	Partly,	$9,000	. . . . .	$3,000
Yes,	1	89	25	100	Sept. 1	Nov. 29, 1886	89	Yes, . .	11,500	. . . . .	5,000
Yes,	1	98	25	255	Oct. 1	Jan. 7, 1887	98	No, . .	19,000	. . . .	15,000
Yes,	1	21	22	120	Nov. 30	Dec. 21, 1886	21	No, .	2,370	. . . . .	10,000
Yes,	1	31	37	90	Nov. 30	Dec. 31, 1886	31	Yes, . .	4,739	300	4,000
Yes,	1	9	52	52	June 30	July 9, 1886	9	Yes, .	824	. . . . .	2,000
No,	1	14	1,500	3,000	Jan. 8	Jan. 22, 1886	14	Yes,	90,000	. . . .	15,000
No,	1	56	50	250	Feb. 1	Mar. 29, 1886	56	Partly,	31,500	. . . . .	4,000
No,	1	44	20	165	Feb. 27	April 12, 1886	44	Yes, .	7,500	. . . . .	2,500
Yes,	1	12	1,959	1,959	March 18	Mar. 30, 1886	12	Yes,	25,075	. . . .	15,000
No,	1	7	26	90	April 1	April 8, 1886	7	No, . .	891	. . . .	200
No,	1	14	100	310	April 13	April 27, 1886	14	No, . .	6 510	. . . . .	5 000
No,	1	19	75	400	April 28	May 17, 1886	19	No,	13 600	. . . .	850
Yes,	1	13	100	100	May 1	May 14 1886	13	Partly,	2.400	. .	300
Yes,	1	59	15	33	June 7	Aug. 5, 1886	59	Yes,	2,100	800	1,300
Yes,	1	59	27	75	June 7	Aug. 5, 1886	59	Yes,	4,000	1,000	1,200
Yes,	1	.	200	200	June 7	Nov. 15, 1886	161	No, . .	10 000	2,500	17 000
Yes,	1	42	70	75	June 8	Nov. 15, 1886	160	No, .	12 000	4,000	8,000
No,	1	. .	14	17	July 1	Aug. 18, 1886	48	No, . .	1,800	400	400
Yes,	1	29	180	300	July 1	July 30, 1886	29	Yes, . .	12 000	. . . .	. .
Yes,	2	23	222	263	July 1	July 24, 1886	23	Yes,	10,500	. . . .	3 500
Yes,	1	39	106	129	July 1	Aug. 9, 1886	39	Yes,	8 300	. . . .	3 000
Yes,	1	39	14	135	July 1	Aug. 9, 1886	39	Yes,	7,000	. .	5 000
Yes,	1	46	240	240	July 3	Aug. 18, 1886	46	Yes,	13,764	300	10,000
No,	1	110	41	292	Aug. 3	Nov. 21, 1886	110	Partly,	29,000	. .	15,000
No,	1	16	12	75	Aug. 3	Aug. 19 1886	16	Yes, . .	1 900	. . . . .	2 000
No,	1	12	30	195	Aug. 3	Aug. 15, 1886	12	Yes, . .	3.400	. . . . .	1,500
No,	1		16	50	Aug. 16	Sept 3, 1886	18	Yes, .	1,100	. . . .	500
No,	1	. . .	52	75	Aug. 18	Sept. 1, 1886	14	No, . .	1,530	. . . . .	500
No,	1	41	30	34	Aug. 23	Sept. 4, 1886	41	No, .	4 032	. . . .	500
No,	1	7	10	10	Aug. 28	Sept. 4, 1886	7	Yes,	130	. . . .	. . .
Yes,	1	21	42	74	Sept. 1	Oct. 8, 1886	37	No,	3 800	.	150
Yes,	1	. . .	45	400	Aug. 30	Nov. 8, 1886	70	Partly,	25 000	1,500	10 000
Yes,	1	. .	35	200	Aug. 30	Oct. 30, 1886	61	Partly,	15 000	1,000	10.000
No,	1	14	16	80	Sept. 1	Oct. 18, 1886	47	Partly,	3.000	. . . . .	1 000
No,	1	44	24	40	Sept. 4	Oct. 18, 1886	44	Partly,	2 735	. . . . .	1,000
No,	1		60	60	Sept. 8	Oct. 18. 1886	44	Partly,	4 118	. .	. .
Yes,	1	7	59	197	Sept. 8	Oct. 13, 1886	35	No, . .	5.500	700	30,000
Yes,	1	35	64	112	Sept. 8	Oct. 13, 1886	35	No, . .	5.000	. . . . .	.
Yes,	1	7	58	86	Sept. 9	Oct 11, 1886	32	No, . .	6 500	. . .	15 000
Yes,	1	34	75	178	Sept. 9	Oct. 13. 1886	34	No, . .	9.000	. . . . .	800
Yes,	1	.	39	70	Sept 9	Oct. 12, 1886	33	No, . .	3.500	. . . . .	1,800
Yes,	1	.	35	56	Sept. 9	Oct. 5, 1886	26	No, . .	3 500	. . . .	. . .
Yes,	1	. . .	30	49	Sept. 9	Oct. 11, 1886	32	No, . .	2,000	. . .	275
Yes,	1	.	10	26	Sept. 11	Oct. 11, 1886	30	No, . .	900	. . . . .	500
No,	3	. . .	95	120	Sept. 20	Oct. 31, 1886	42	No, . .	7.500	. . .	3,700
Yes,	1		24	750	Sept. 21	Oct. 30, 1886	39	No, . .	28,700	. . . . .	. .
Yes,	1	10	325	325	Oct. 6	Oct. 16, 1886	10	No, .	5,200	. . .	5,000
Yes,	1	1	52	52	Oct. 22	Nov. 6, 1886	15	No, .	1,000	2,400	10,000
No,	1	9	32	63	Oct. 30	Mar. 7 1887	128	Yes, .	4,000	945	3,500
No,	1	9	12	90	Oct. 30	Mar. 7, 1887	128	Yes,	4 000	945	3 500
No,	1	84	12	144	Oct. 30	Mar. 10 1887	131	No, . .	22.000	1,431	10,000
Yes,	1	23	32	63	Nov. 27	Dec. 20, 1886	23	Yes,	2,299	256	1,000
No,	1	93	1,130	1 130	March 1	June 2, 1886	93	No, . .	60 000	3.000	20.000
Yes,	1	57	150	150	March 5	May 1 1886	57	No, . .	7 500	300	4 500
No,	2	87	1.600	1,600	March 8	June 3, 1886	87	No, . .	168,000	4,000	45,000
Yes,	1	81	1.525	1,575	March 8	May 28, 1886	81	No, .	125,000	2,500	30,000
No,	12	83	450	515	March 10	June 1, 1886	83	No, . .	30,500	. . . .	25,400

STATISTICS OF

INDUSTRIES AND YEARS.	LOCALITY.	CAUSE OR OBJECT.
1886.		
Mining.		
Miners, &c., coal,	Riddlesburg,	For increase of wages,
Miners, &c., coal,	Centre and Clearfield counties.	For increase of wages,
Miners, &c., coal,	Osceola and Houtzdale,	For increase of wages,
Miners, &c., coal,	New Bethlehem,	For increase of wages,
Miners, &c., coal,	Fairmount,	For increase of wages,
Miners, &c., coal,	Reynoldsville,	For increase of wages,
Miners, &c., coal,	Dubois,	For increase of wages,
Miners, &c., coal,	Fairmount,	For increase of wages,
Miners, &c., coal,	Scott Haven,	In sympathy with the strike elsewhere.
Miners, &c., coal,	Reynoldsville,	For increase of wages,
Miners, &c., coal,	Western Pennsylvania,	For increase of wages,
Miners, &c., coal,	Scott Haven,	For increase of wages,
Miners, &c., coal,	Karn's City,	For increase of wages,
Miners, &c., coal,	McClure and Stoneville,	For payment by the bushel instead of by the wagon.
Miners, &c., coal,	East Brady,	For increase of wages,
Miners, &c., coal,	Imperial Station,	For increase of wages,
Miners, &c., coal,	Western Pennsylvania,	For pay for dead work,
Miners, &c., coal,	Scott Haven,	For pay for dead work,
Miners, &c., coal,	Lilly and Gallitzen,	Against reduction of wages,
Miners, &c., coal,	Elk Lick,	Against reduction of wages,
Miners, &c., coal,	South Fork,	Against reduction of wages,
Miners, &c., coal,	Wilkinsburg,	For increase of wages,
Miners, &c., coal,	Sandy Run,	For increase of wages,
Miners, &c., coal,	Scott Haven,	For employment of a certain check-weighman.
Miners, &c., coal,	Freeport,	Against reduction of wages,
Drivers, &c., coal,	East and West Leisenring,	For reduction of hours,
Miners, &c., coal,	Allenport,	Against change of screen,
Miners, &c., coal,	Girardville,	For increase of wages,
Miners, &c., coal,	Pleasant Valley,	For payment by the ton instead of by the car.
Miners, &c., coal,	Mt. Carmel,	For increase of wages,
Pottery, Earthenware, &c.		
Employees pottery works,	Philadelphia,	For new bill of prices,
Printing and Publishing.		
Lithographers,	Philadelphia,	For reduction of hours,
Lithographers,	Philadelphia,	For reduction of hours,
Lithographers,	Philadelphia,	For reduction of hours,
Lithographers,	Philadelphia,	For reduction of hours,
Silk goods,	Allentown,	For increase of wages,
Stone Quarrying and Cutting.		
Stonecutters,	Pittsburgh,	For increase of wages and reduction of hours.
Tobacco.		
Cigarmakers,	Reading,	For increase of wages, &c.,
Cigarmakers,	Mehn's Hill and Stouchburg.	For increase of wages, &c.,
Cigarmakers,	Reading,	For increase of wages, &c.,
Cigarmakers,	Reading,	For increase of wages, &c.,
Cigarmakers,	Reading,	For increase of wages, &c.,
Cigarmakers,	Reading,	For increase of wages, &c.,
Cigarmakers,	Reading,	For increase of wages, &c.,
Cigarmakers,	Reading,	For increase of wages, &c.,
Cigarmakers,	Wernersville	For increase of wages, &c.,
Cigarmakers,	Reading,	For increase of wages, &c.,
Cigarmakers,	Ephrata,	Against reduction of wages,
Cigarmakers,	Philadelphia,	For discharge of one non-union employee.
Cigarmakers,	Lock Haven,	For increase of wages,
Cigarmakers,	Philadelphia,	Against employment of females at less than union prices.
Cigarmakers,	Philadelphia,	Against employment of members of Cuban federation.
Cigarmakers,	Philadelphia,	Against employment of members of Cuban federation.
Cigarmakers,	Philadelphia,	Against employment of members of Cuban federation.

STRIKES—Continued.

Ordered by labor organization.	Establishment. Number.	Establishment. Days closed.	Number of persons engaged in strike.	Number of persons involved in strike.	Beginning.	End.	Duration—days.	Succeeded.	Employees. Loss.	Employees. Assistance.	Employers' loss.
Yes,	2	83	140	165	March 10	June 1, 1886	83	Yes,	$12 000		$4.000
No,	1	7	400	470	March 12	Mar. 19, 1886	7	Yes,	4,000		2 500
Yes,	61	74	2 002	2 080	March 12	May 25, 1886	74	No,	133 500	5.650	33 500
Yes,	1	102	168	172	March 17	June 27, 1886	102	No,	20 000	300	8.700
Yes,	1	90	190	212	March 17	June 15, 1886	90	No,	23 000	400	13 500
Yes,	1	128	480	480	March 27	July 23 1886	128	No,	52 992		20.000
Yes,	1	128	560	575	March 22	July 28 1886	128	No,	25 000	1.500	20 000
Yes,	1	76	170	174	March 24	June 8 1886	76	No,	15 450	200	7 500
Yes,	1	47	300	306	March 24	May 10, 1886	47	No,	15,000	500	5 000
Yes,	1	74	190	190	March 26	June 8, 1886	74	No,	12 000	300	7 500
No,	7	30	840	840	April 1	May 1, 1886	30	Yes,	32.760		6.100
No,	4	44	700	700	April 1	May 15 1886	44	Yes,	39.900		8.000
Yes,	1	63	73	73	April 4	June 6, 1886	63	Partly,	4 906	200	2,000
No,	3	7	116	380	April 5	April12, 1886	7	Yes,	3,466		950
Yes,	1	40	145	149	May 1	June 10, 1886	40	No,	7 500	100	5 000
No,	1	21	140	140	May 7	May 28 1886	21	No,	3 936		600
No,	7	47	840	840	May 23	July 12 1886	47	Yes,	45.696		11 100
Yes,	6	44	1 320	1.320	June 7	July 21, 1886	44	No,	68.376	7 000	25 000
Yes,	3	43	1.110	1.306	June 8	July 21, 1886	43	No,	49 500		25 738
No,	3	43	275	500	June 8	July 21, 1886	43	Yes,	15 000		6 150
Yes,	7	43	490	550	June 8	July 21, 1886	43	No,	20 700	1,050	11 850
No,	1	27	150	175	July 5	Aug. 1, 1886	27	No,	4,006		1.000
No,	1	7	46	320	July 15	July 22, 1886	7	No,	1,200		150
No,	6	23	1,300	1,300	July 24	Aug. 16, 1886	23	No,	40 885		10 000
No,	1	61	15	15	Aug. 1	Oct. 1, 1886	61	No,	1 080		500
No,	1	7	22	410	Aug. 16	Aug. 23. 1886	7	No,	3 788		3 0 0
No,	1	14	65	70	Aug. 24	Sept. 7 1886	14	Yes,	1,239		250
No,	1	8	48	48	Sept. 15	Sept. 23 1886	8	No,	504		210
No,	1	75	100	335	Oct. 1	Feb. 10, 1887	132	Yes,	20,000	2,000	15 000
No,	1	41	375	375	Nov. 4	Dec. 15, 1886	41	Yes,	13,303	1,000	2 000
Yes,	1	12	119	119	April 7	April19, 1886	12	Yes,	1 660		1 500
Yes,	6		69	85	Sept. 6	Jan. 24. 1887	140	No,	19 540	10 349	23 000
Yes,	1		9	9	Sept. 6	Dec. 10, 1886	95	Yes,	1,800	1,181	25.000
Yes,	1		4	4	Sept. 6	Dec. 14 1886	99	No,	740	630	500
Yes,	1		15	15	Sept. 6	Oct. 25, 1886	49	Yes,	1,200	653	3,000
No,	1		30	30	Nov. 30	Dec. 14, 1886	14	No,	360	300	200
Yes,	20	32	130	130	May 1	June 2, 1886	32	Partly,	11 636	2,600	4,375
Yes,	1	56	50	84	May 12	Sept. 1, 1886	112	No,	7,600		500
Yes,	2		40	52	May 12	Sept 15, 1886	126	No,	5,700	19,570	500
Yes,	1	3	50	73	May 12	Sept. 1, 1886	112	No,	8,000		5 000
Yes,	1	109	17	22	May 15	Sept. 1, 1886	109	No,	3,918		2,100
Yes,	1	21	25	43	May 15	June 5. 1886	21	Yes,	412		100
Yes,	2	70	22	27	May 15	July 24. 1886	70	Yes,	1 600		400
Yes,	1	5	8	11	May 15	Sept. 6 1886	109	No,	900		2,500
Yes,	1	4	5	8	May 15	Sept. 1 1886	109	No,	580		50
Yes,	1	14	26	40	May 17	Sept. 15 1886	121	No,	2.000		700
Yes,	1	14	130	179	May 17	Sept 13, 1886	119	No,	18 000		15 000
Yes,	1	14	33	55	June 12	June 30, 1886	18	Yes,	900	249	350
No,	1		42	42	June 18	July 9, 1886	21	No,	1,500		500
Yes,	3		18	18	August 2	Nov. 8, 1886	98	No,	1,230	593	500
No,	1		25	25	Sept. 13	Oct. 2, 1886	19	No,	700	300	500
Yes,	2		27	247	Sept. 13	Nov. 3, 1886	51	No,	6,700		7,200
Yes,	1		10	14	Sept. 13	Oct. 4, 1886	21	No,	300		100
Yes,	1		18	18	Sept. 13	Sept. 27, 1886	14	No,	432		150

STATISTICS OF

INDUSTRIES AND YEARS.	LOCALITY.	CAUSE OR OBJECT.
1886.		
Transportation.		
Drivers and conductors, street railways.	Pittsburgh,	For reduction of hours,
Brakemen and yardmen,	Sharon,	For increase of wages,
Brakemen and yardmen,	Sharon,	For increase of wages,
Wooden Goods.		
Employees. planing mill,	Germantown,	For reduction of hours,
Employees, planing mill,	Philadelphia,	For reduction of hours,
Employees, plauing mill,	Philadelphia,	For reduction of hours,
Employees, planing mill,	Philadelphia,	For reduction of hours,
Employees, planing mill,	Philadelphia,	For reduction of hours,
Woolen Goods.		
Weavers,	Philadelphia,	For increase of wages,
Piecers,	Germantown,	For increase of wages,
Piecers,	Germantown,	For increase of wages,
Miscellaneous.		
Weavers, upholstery goods factory,	Philadelphia,	Against reduction of wages,
Weavers, upholstery goods factory,	Philadelphia,	Against reduction of wages,
Employees, piano factory,	Philadelphia,	For eight hours work with ten hours pay.
Dyers, dyeing and finishing mill,	Holmesburg,	For increase of wages,
Mill hands, oil cloth factory,	Philadelphia,	For re-instatement of two discharged employees.
Weavers, dress goods and trimmings factory.	Philadelphia,	Against change from week to piece work.
Employees, bone button factory,	Philadelphia,	Against reduction of wages,
Dyers, braid and worsted embroidery factory.	Philadelphia,	For increase of wages,
Employees, pearl button factory,	Philadelphia,	For increase of wages,
Employees, pearl button factory,	Philadelphia,	For new bill of prices,
Still men, oil refinery.	Philadelphia,	Against reduction of wages,
Employees, pearl button factory,	Philadelphia,	For increase of wages,
Dyers, dye works,	Frankford,	Against performing work for a factory in which a strike was pending.
School teachers,	Connellsville,	For eight months pay for seven months work.
Weavers, dress goods trimmings factory.	Philadelphia,	Against reduction of wages,
Weavers, upholstery goods factory,	Philadelphia,	Against reduction of wages,
Weavers, upholstery goods factory,	Philadelphia,	Against reduction of wages,

STRIKES—Continued.

Ordered by labor organization.	Establishment. Number.	Establishment. Days closed.	Number of persons engaged in strike.	Number of persons involved in strike.	Beginning.	End.	Duration—days.	Succeeded.	Employees. Loss.	Employees. Assistance.	Employers' loss.
Yes,	8	. . .	211	211	March 27	April 4, 1886	8	Yes,	2 993	. . . . .	2,550
No,	1	. . .	12	12	August 25	Sept. 8, 1886	14	No,	252	. . . . .	2 000
No,	1	. . .	12	12	Sept. 20	Oct. 10, 1886	20	No,	378	. . . . .	2,500
Yes,	1	.	35	35	May 1	June10, 1886	40	No,	2,440	50	1,000
No,	1	.	12	12	May 3	May 10, 1886	7	No,	160	. .	50
Yes,	3	3	110	111	June 1	June 9, 1886	8	No,	1 488	. .	750
Yes,	12		197	199	June 1	June 9, 1886	8	No,	2,751	. . . .	2 220
Yes,	1	7	20	20	June 1	June 8, 1886	7	No,	330	. . . .	. . .
Yes,	1	14	90	300	May 10	May 31, 1886	21	No,	5 940	. .	1 200
No,	1	. . .	9	9	August 13	Aug. 20, 1886	7	Yes,	41	. . . .	. .
No,	1	.	25	25	August 23	Aug. 30, 1886	7	No,	113	. . . . .	50
Yes,	4	. . .	118	153	Feb. 15	Mar. 1, 1836	14	Yes,	2 753	. . . .	2 000
Yes,	4	. . .	34	64	Feb. 15	Feb. 24, 1836	9	Yes,	1 653	.	1 050
Yes,	1	. . .	80	80	May 1	Sept. 8, 1886	130	No,	20,000	6 000	22,000
Yes,	1	. .	5	63	May 10	July 14, 1886	65	No,	3,786	2,000	12,578
No,	1	. . .	75	75	June 29	July 6, 1886	7	No,	824	. . . .	300
No,	1	. .	17	42	July 9	Aug. 2, 1886	24	Yes,	1,100	. . . . .	5,000
No,	1	. . .	120	120	July 14	July 21, 1836	7	No,	900	. . . .	200
No,	1	. .	23	23	July 22	Aug. 27, 1886	36	Yes,	1,050	. . . . .	500
Yes,	1	. .	11	11	Sept. 5	Sept. 12, 1886	7	Yes,	121	63	50
Yes,	1	7	2	2	Sept. 5	Sept. 12 1886	7	Yes,	24	12	15
Yes,	1	.	26	143	Sept. 6	Sept. 20, 1886	14	Yes,	2,900	486	. .
Yes,	1	. . .	14	14	Sept. 20	Nov. 6, 1886	47	Yes,	792	504	300
No,	1	. .	105	105	Oct. 4	Oct 15, 1886	11	No,	1 920	. .	1,500
No,	1	13	13	13	Nov. 9	Nov. 22, 1886	13	No,	262	. . . .	. . . .
No,	1	. . .	18	25	Nov. 23	Dec. 6, 1886	13	No,	413	. . . .	150
No,	6	. . .	49	109	Dec. 1	Jan. 16, 1837	46	Yes,	4,590	. . . . .	1 700
No.	6	. . .	135	229	Dec. 1	Jan. 16, 1837	46	Yes,	10 400	. . . . .	4 850

ALL INDUSTRIES FOR ALL YEARS.—PENNSYLVANIA.

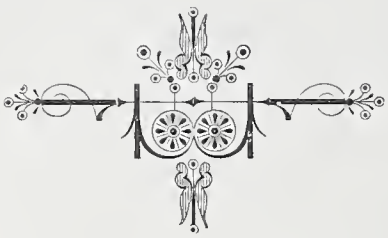
INDUSTRY.	ORDERED BY ORGANIZATION.		ESTABLISHMENTS.				DURATION. (DAYS.)		RESULTS.			EMPLOYEES'		
	Yes.	No.	Number.	Number closed.	Aggregate days closed.	Average days closed.	Aggregate.	Average.	Succeeded.	Partly succeeded.	Failed.	Loss.	Assistance.	Employers' loss.
Boots and shoes,	5	4	9	7	126	18.0	483	53.7	6	1	2	$25,2:8	$5,400	$8,500
Brewing,	.....	1	1	.....	.....	.....	8	8.0	1	.....	.....	312	.....	100
Brick,	11	2	13	12	89	7.4	105	8.1	4	.....	9	12,895	1,200	6,280
Building trades,	363	17	380	268	7,316	27.3	9,860	25.9	137	236	7	191,583	18,062	121,251
Carpeting,	12	71	83	22	410	18.6	4,795	57.8	45	21	17	461,553	14,000	217,985
Clothing,	90	11	101	7	109	15.6	1,442	14.3	15	52	34	115,736	5,050	66,895
Cooperage,	.....	7	7	1	16	16.0	85	12.1	3	.....	4	7,653	.....	805
Cotton goods,	2	16	18	10	278	27.8	418	23.2	4	1	13	39 039	3,650	18,950
Cotton and woolen goods,	6	23	29	17	320	18.8	464	16.0	12	5	12	69,811	7,750	32,900
Food preparations,	37	1	38	.....	.....	.....	261	6.9	.....	.....	38	779	.....	3,275
Furniture,	42	2	44	13	202	15.5	1,244	28.3	9	.....	35	34,407	4,804	31,885
Gas and coke,	1	135	136	136	3,441	25.3	3,441	25.3	63	1	72	459,452	3,198	126,505
Glass,	44	43	87	54	3,865	71.6	5,141	59.1	34	5	48	816,964	86,507	174,210
Leather and leather goods,	3	12	15	8	37	4.6	108	7.2	6	.....	9	5,342	910	5,950
Machines and machinery,	16	1	17	6	16	2.7	826	48.6	13	.....	4	35,854	550	47,685
Metals and metallic goods,	169	139	308	197	10,566	53.6	13,741	44.6	127	28	153	4,449,581	474,394	1,141,068
Mining,	514	366	880	873	41,481	47.5	41,819	47.5	186	52	642	5,850,382	101,053	1,519,219
Pottery, earthenware, etc.,	1	.....	1	1	12	12.0	12	12.0	1	.....	.....	1,600	.....	1,500
Printing and publishing,	21	.....	21	2	2	1.0	1,316	62.7	6	.....	15	25,430	12,968	67,860
Public ways construction,	.....	7	7	1	7	7.0	40	5.7	1	.....	6	6,485	.....	1,400
Public works construction,	.....	1	1	.....	.....	.....	2	2.0	.....	.....	1	125	.....	.....
Railroad cars,	.....	4	4	2	2	1.0	12	3.0	4	.....	.....	619	.....	1,000
Shipbuilding, etc.,	12	.....	12	1	49	49.0	323	26.9	7	....	5	20,899	.....	15,800
Silk goods,	.....	2	2	.....	.....	.....	16	8.0	.....	.....	2	390	300	300
Stone quarrying and cutting,	37	3	40	30	695	23.2	750	18.8	18	20	2	17,525	2,744	7,266
Telegraphy,	Strike of July 19, 1883.—(See New York.)													

Tobacco,	62	14	76	28	855	30.5	8,085	40.6	40	6	30	88,749	22,450	59,750
Transportation,	14	10	24	4	19	4.8	162	6.8	11	. . . . .	13	24,124	1,000	68,970
Wooden goods,	22	7	29	4	31	7.8	551	19.1	1	. . . . .	28	11,479	30	8,880
Woolen goods,	2	11	13	5	62	12.4	460	35.4	8	. . . . .	5	48,690	6,201	46,025
Miscellaneous,	18	28	46	3	85	11.7	1,101	23.9	34	1	11	66,750	9,068	62,513
Total	1,504	938	2,442	1,712	70,041	40.9	92,074	37.7	796	429	1,217	$12,890,346	$781,338	$3,897,757

ALL INDUSTRIES FOR ALL YEARS—PENNSYLVANIA—*Continued.*

INDUSTRY.	NUMBER OF EMPLOYEES.						EMPLOYEES STRIKING AND INVOLVED.			NEW EMPLOYEES AFTER STRIKE.			
	BEFORE STRIKE.			AFTER STRIKE.									
	Male.	Female.	Total.	Male.	Female.	Total.	Employees striking.	Male.	Female.	Total.	Male.	Female.	Total.	Brought from other places.
Boots and shoes,	1,066	674	1,740	1,032	664	1,696	1,167	667	579	1,246	65	.....	65	15
Brewing,	69	.....	69	69	.....	69	24	24	.....	24	.....	.....	.....	.....
Brick,	990	.....	990	970	.....	970	651	941	.....	941	27	.....	27	.....
Building trades,	4,353	.....	4,353	4,357	.....	4,357	3,709	4,166	.....	4,166	43	.....	43	10
Carpeting,	8,461	5,734	14,195	8,372	5,865	14,237	3,550	3,932	2,437	6,369	312	613	925	32
Clothing,	6,421	10,691	17,112	6,406	10,783	17,194	1,835	4,484	6,329	10,813	104	282	386	42
Cooperage,	1,343	.....	1,343	1,392	.....	1,392	328	335	.....	335	147	.....	147	.....
Cotton goods,	1,482	1,130	2,612	1,431	1,065	2,496	1,374	1,118	782	1,900	251	83	334	130
Cotton and woolen goods,	3,165	3,993	7,158	3,166	3,966	7,132	2,697	2,242	2,830	5,072	118	119	237	79
Food preparations,	301	50	351	301	50	351	113	101	12	113	.....	3	3	.....
Furniture,	2,378	19	2,397	2,401	19	2,420	830	1,072	6	1,078	176	.....	176	10
Gas and coke,	16,268	.....	16,268	16,268	.....	16,268	15,241	15,635	.....	15,635	39	.....	39	.....
Glass,	12,449	217	12,661	12,489	217	12,706	2,602	9,245	42	9,287	464	.....	464	57
Leather and leather goods	916	30	946	894	30	924	211	499	8	507	62	.....	62	3
Machines and machinery,	2,731	.....	2,731	2,730	.....	2,730	565	2,167	.....	2,167	207	.....	207	5
Metals and metallic goods,	123,511	250	123,761	122,646	277	122,923	49,247	90,318	123	90,441	2,539	47	2,586	876
Mining,	126,331	.....	126,331	123,954	.....	123,954	102,751	118,426	.....	118,426	4,003	.....	4,003	1,719
Pottery, earthenware, etc.,	100	20	120	100	20	120	119	99	20	119	.....	.....	.....	.....
Printing and publishing,	966	74	1,040	935	75	1,010	232	274	1	275	131	1	132	4
Public ways construction,	1,700	.....	1,700	1,510	.....	1,510	1,320	1,410	.....	1,410	250	.....	250	200
Public works construction,	100	.....	100	100	.....	100	100	100	.....	100	50	.....	50	.....
Railroad cars,	859	.....	859	859	.....	859	162	239	.....	239	.....	.....	.....	.....
Shipbuilding, etc.,	1,292	.....	1,292	1,274	.....	1,274	479	539	.....	539	2	.....	2	.....
Silk goods,	230	470	700	230	470	700	50	30	20	50	25	.....	25	25
Stone quarrying and cutting,	878	.....	878	844	.....	844	719	719	.....	719	20	.....	20	20
Telegraphy,	Strike of July 19, 1883—(See New York.)													

Tobacco,	2,853	732	3,585	2,778	730	3,508	1,954	2,047	478	2,525	504	184	688		31
Transportation,	3,531	8	3,539	3,526	8	3,534	2,490	2,698	. . . . .	2,698	167	. . . . .	167		. . . . .
Wooden goods,	1,230	90	1,320	1,241	90	1,331	597	570	30	600	107	. . . . .	107		. . . . .
Woolen goods,	2,533	2,077	4,610	2,483	2,027	4,510	867	1,554	1,134	2,688	160	80	240		. . . . .
Miscellaneous,	5,109	1,778	6,887	5,170	1,805	6,975	2,348	2,239	643	2,882	253	55	308		80
Total	333,611	28,037	361,648	329,928	28,166	358,094	198,332	267,690	15,474	283,364	10,226	1,467	11,693		3,500



THE AMALGAMATED ASSOCIATION OF IRON AND STEEL WORKERS.

Sketch of its History with reference to the Rise and Progress of Methodical Conciliation, and the Sliding Scale of Wages and their Results in Combination with Organization.

[The following article has been prepared at the request of the Bureau by Mr. Charles G. Foster, editor of the *National Labor Tribune* which is the official organ of the Amalgamated Association of Iron and Steel Workers —*Chief of Bureau.*]

The Amalgamated Association of Iron and Steel Workers had its source in a combination of organized forces of the skilled trades of the iron and steel mills of this country, as they were some thirteen years ago; and as the association now stands, it represents those original forces rendered stronger by accessions, and perfected by the experience of years of an active and reasonably successful career. A comprehensive sketch of this organization would be lacking in an essential without some reference to the several organizations of which it is an amalgamation.

The most important of these was the United Sons of Vulcan, which was organized on the 12th of April, 1858,—"away back," when the union of labor was regarded as almost an unpardonable sin, and more than a mere suggestion of which was quite likely to result in the vindicative application of the "black list." The Sons of Vulcan had its beginning in a back room of a then popular hostelrie in Diamond alley, Pittsburgh, known as "Our House." There were not many sons born to the organization on that occasion, and those who were, maintained the closest secrecy as to what they had done, and what they contemplated; so close indeed that but very few other boilers were approached with the view to an increase of membership, and those only who were known as the most reliable men for the purpose. In fact, so hostile was the feeling of employers to labor organization, that within six months the "Sons" concluded to forego effort in the direction of their hopes until more favorable conditions existed.

It was not until 1861 that the organization was revived, a platform of principles and a constitution adopted, and a systematic effort made to bring the "Sons" up to a degree of strength that would promise usefulness. However, this revival was more earnest than effective. The boilers had become accustomed, through years of hard practice, to accept the fiat of employers, and a spirit of resistance was difficult

to develop. It was the war of the rebellion that finally evolved the opportunity. In 1861, Miles S. Humphries was chosen Grand Master, and he had the ability to perceive and the energy to take advantage of the revival of business, which was brought about by the tariff of that year.

It was at the second annual convention that a general constitution was adopted; and at this time the Sons of Vulcan pushed for success openly, compared with the secrecy which had prevailed before 1861. The organization was extended into all the States where the iron manufacturing industry existed, and there was frequent demand for wages in accord with the advancement of the card of prices. On a rising market, of course, success was not problematical, and with success came accessions to the membership.

The scale system of prices had its inception and its early growth in this organization, it having been suggested to President Humphries by Mr. B. F. Jones, of Jones & Laughlin's American Iron Works, Pittsburgh, in the first month of 1865, or mayhap as far back as the previous year, inasmuch as Mr. Humphries had time to study the hint given him, and develop it in season for submission to a conference in January, 1865. He was quick to appreciate the peace-making possibilities of such a plan of wage-regulation, and worked out its development to a point admitting of its practical application. The conference of January was the first conciliatory joint meeting in the trade, and on February 13th following a scale of prices, the first on record, was adopted. Years of trial have proved this to be the best means toward that important end, the amicable arrangement of the wages of labor; and so successful has it been in the iron and steel industries that it is gradually being adopted by other industries. Further reference to it will be made in another part of this paper; suffice it to say here that imperfect as the scale was in its early days, it served to reduce the difficulties which it was intended to correct, and its merits as a measure of peace have been fully acknowledged on all sides.

Another of the iron and steel unions was the Associated Brotherhood of Iron and Steel Rail Heaters, organized in August, 1872. There had been local lodges previous to that date, so far back as 1869, when one was instituted at Chicago, Ill., but there was no concerted action until 1872. In the first convention the word "rail" was eliminated from the title, and bar-plate and guide-mill heaters were made eligible to membership. The brotherhood started with nine lodges, and at the second convention, held in Allegheny City, Pa., in May, 1873, had twenty-two lodges. Thereafter internal dissensions absorbed the energy that should have been devoted otherwise, and the brotherhood did not make a record of usefulness.

Yet another of the separate unions was the Iron and Steel Roll Hands' Union, organized in 1870, of rollers, roughers, catchers and

hookers employed at the North Chicago mills. Other mills followed, and in June, 1873, a national convention was held of delegates representing fifteen lodges with a membership of four hundred and seventy-three. Originally this organization was very jealous of its independence, this having arisen from the fact that the trades composing it had not been included by the Brotherhood of Heaters, Rollers and Roughers in that organization; but afterwards the roll hands' union became quite zealous and efficient in favor of consolidation of the mill trades.

The United Nailers was composed of a few local lodges, without national organization. It was the fourth of the then existing organizations (1874) which, through stress of depression of business, were moved to adopt the only practical course for relief, namely, amalgamation of their unions for mutual support of their united interests.

The Amalgamated Association.

Preliminary to the movement that culminated in the consolidation of the organizations of the skilled workmen of the iron and steel mills, it is pertinent to refer here to some of the leading reasons for that important action. The workmen had organizations of classes of labor, each more or less dependent upon the others, yet without official connection, and consequently there was absence of method calculated to harmonize the several bodies in aims that would have been advantageous to each and all. The United Sons of Vulcan might have had a grievance, and the rollers and heaters not be in sympathy and *vice versa*, while the roll hands might have made a demand that would have affected the boilers and the rollers quite as distressingly as it would the employer.

With organization strengthened it was seen that conciliation would be less difficult of attainment, and following this the sliding scale would almost assure that justice between employer and employé, which is necessary to the peace and prosperity of both, as well as to the best interests of the public. Organization without the power to keep an agreement is of the least utility, whether the policy adopted be arbitration or conciliation or a mixture of the two. Each of these organizations had such a numerous membership that, if they had been combined, the legitimate end of thorough labor organization would have been accomplished. The inter-dependence that had prevailed furnished the experience that there must be amalgamation of all trades that were the separate factors, if there was to be the strongest form of organization possible for them, and the best conditions to secure and preserve fair wages and reasonable terms of labor. It was the conviction that this course was the common sense direction which the labor and time and expense of previous organization should take to secure the most valuable results attainable that brought about amalgamation.

The first official action taken toward amalgamation was that by the Iron and Steel Roll Hands' Union, in convention at Columbus, Ohio, in April, 1874. The National Forge of the United Sons of Vulcan, held in Philadelphia in August, 1875, took favorable action on this question, and because of this action, the joint committee on amalgamation of the Associated Brotherhood of Iron and Steel Heaters, Rollers and Roughers, and the Iron and Steel Roll Hands' Union, at Indianapolis, Indiana, August 7, 1875, deferred further immediate consideration of a resolution looking to the amalgamation of these two bodies, with the view to including also the United Sons of Vulcan. This action of the latter at Philadelphia was the outcome of correspondence with it, authorized by the Roll Hands' Union, but there was some delay because of the neglect of the National Forge to appoint a committee of conference.

At the next annual meeting the president, Mr. Harris, urged very strenuously the necessity and the advantages of the consolidation of all branches of iron and steel workers. The other organizations in interest met in the same city, Philadelphia, coincidently. The result, however, was not as definite as it might have been; but, in correspondence subsequently held by the new president of the United Sons of Vulcan, Captain Joseph Bishop, an arrangement was made for a meeting of committees of the several organizations at Pittsburgh, on December 7, 1875. Following is a list of the committees on amalgamation:

United Sons of Vulcan—Joseph Bishop, president N. F.; E. H. McAninch, deputy First district; David Reese, deputy Second district; John Jarrett, deputy Sixth district.

A. B. of I. and S.—Heaters, Rollers and Roughers—Richard Sullivan, vice grand sire; Benjamin F. Spangler, grand scribe; James Penny, Central Lodge No. 10, Pennsylvania; James T. Clites, Wheeling Lodge No. 1, West Virginia.

Iron and Steel Roll Hands' Union—David A. Plant, grand president; William Martin, grand recording secretary; John W. Fultz, grand treasurer.

The convention of the committees met at 10 A. M., on December 7, 1875, president Bishop of the National Forge, in the chair, and William Martin of the Roll Hands' Union, secretary. The convention labored for five days, formed a constitution and by-laws for an amalgamated association, to be submitted to the lodges and forges, and arranged for a convention of the several organizations, to be held in Pittsburgh, on the first Tuesday in August, 1876.

At these conventions each favored the plan of amalgamation, and on Thursday, August 3, 1876, the Sons of Vulcan committee escorted the representatives of the Heaters and Roll Hands' Unions to the hall of the United Sons of Vulcan, and the formal organization was at once entered into. James Grundy was chairman, and William Martin sec-

retary. There were present forty-six representatives of the Sons of Vulcan; fifteen of the Heaters' Brotherhood; six of the Roll Hands' Union, and one of the Nailers' Association. Only a few alterations of the constitution and by-laws submitted by the joint committee were made. The main point of discussion was the question whether "arbitration" should be adopted as a method, but the word was ordered, by a vote of fifty majority, to be stricken from the constitution.

The First Constitution.

The salient features of the first constitution may be referred to briefly. The Amalgamated Association claimed jurisdiction over all lodges then, or thereafter to be organized, as to matters of general importance relating to the welfare of the organization, its decisions thereon to be final, and to it belonged the authority to determine the customs and usages of the trades in interest. The officers were a president, secretary, a vice-president for each district, a treasurer and three trustees. Subordinate lodges could be organized upon a nucleus for each of not less than five practical iron and steel workers, each to have a corresponding representative whose duty consisted in giving a full report of his sub-lodge to headquarters on the last day of every month. Revenue was derived from the issue of sub-lodge charters, rituals, traveling cards, etc., and a quarterly tax in the discretion of the president, and a fund of twenty-five cents *per capita*, each quarter was required to be provided as a protection against "a rainy day," of strikes and lock-outs. The convention was to be annually on the first Tuesday of August. A member in good standing desirous of migrating was entitled to a traveling or clearance card, to be issued by headquarters on request of his sub-lodge, which card was necessary to his amicable reception by other sub-lodges. A "dishonorable member" was defined as one guilty of having robbed or embezzled from a brother member, or having left in debt to a member with intent to defraud, or had fraudulently received or misapplied funds of the association, or had slandered any brother member, or had advocated division of the funds, or separation of lodge districts, or acted contrary to the established rules of the association on any question affecting the price of labor or the system of working in any district, provided this was opposed to the interests of his fellow-workmen in keeping with the rules of the association. Such dishonorable member was disciplined by fine, suspension or expulsion, as determined by a vote of two-thirds of the members of his sub-lodge present at his trial.

The vice-president of a district was empowered to legalize strikes, and his duty further compelled him to furnish headquarters with complete statements of such difficulties and other grievances; but a vice-president was not authorized to legalize a strike until after thorough investigation, and all honorable means of avoidance had been employed. An illegal strike was entitled to no aid from the common

fund, nor was a member except his record was clear. The point of protection of members deemed of most importance, was discharge from employment for taking active part in the affairs of the association. But a member thus discharged had to show that there was no charge of misconduct or wilful neglect of work for his own pleasure, or for attending meetings or for attending other business of the association without leave of absence from the manager over his department. In such case the association paid the discharged member a weekly allowance until a situation was procured for him.

The constitution, by-laws and rules of order adopted in 1875 strike one as quite simple in their tenor, though in the light of the subsequent history of the iron and steel industries, as having been lacking in many essentials. Condensed into brief space the thirty small pages of laws and rules signify a national organization with a chief executive, and staff consisting of headquarters' officials who composed a cabinet or advisory board; territory divided into districts, over which a superior officer had charge under the chief, which districts were composed of subordinate lodges organized in the mills, the sub-lodge being the unit of organization. Superior to all these was the annual convention. The individual member might strike of his own volition, as could the sub-lodge, but such strike had subsequently to receive the approval of the district vice president before it could have the support of the general organization. The president had supervision over all, with authority to suspend sub-lodges for infraction of the law. Violations or alleged violations of customs and usages, rather than of the written law of the association, seemed to have been the source from which came the larger part of the labors of vice presidents.

The Foundation Principles and Growth.

The first constitution of the association, as printed, sets forth the objects as being "to obtain by arbitration and conciliation, or by other means that are fair and legal, a fair remuneration to the members for their labor, and to afford mutual protection to members against broken contracts, obnoxious rules, unlawful discharge or other systems of injustice or oppression," and the trades included were boilers, heaters, roll hands, nailers and helpers. As in a measure indicative of the progress made in twelve years, it should be stated that the constitution amended in the interval and adopted by the convention, which met in the same city as did the first convention, in June, 1887, includes in the membership the following trades: Puddlers, boilers, scrappers, bushelers, heaters and their helpers; rollers and roll hands, including drag-outs on muck mills; hookers and reel hands on rod mills; hammermen, shinglers, knobblers, refiners, wire drawers, nailers, spike makers, nail and spike feeders, roll turners, shearmen and annealers in boiler plate, nail plate and sheet and jobbing mills; also shearmen in muck and bar mills; also pilers, chargers, buggymen and straight-

eners on all mills over and including sixteen inch trains; also picklers, annealers, washmen, assorters and tin men in tin mills; hot and cold straighteners, gaggers, drillers, hot bed men and chippers in rail mills; also cupola tenders, speigel melters, runnermen, vesselmen, bottom makers, ladlemen, pitmen, blowers, pipe fitters and all men directly connected with cupolas, blowing vessels, heating furnaces and rolls in steel works, and engineers and water tenders in iron and steel mills. These accessions were made in pursuance of the same policy that led to the amalgamation of the half dozen trades mentioned in the constitution of 1875.

The objects as they are noted in the constitution of 1887, are stated as being the elevation of the position of its members, the maintenance of the best interests of the association and to obtain, by conciliation, or by other means just and legal, a fair remuneration to members for their labor, and to afford mutual protection to members against broken contracts, obnoxious rules, unlawful discharge or other systems of injustice or oppression.

It will be observed that in the first constitution as printed and published the term "arbitration and conciliation" is employed, and that "arbitration" does not appear in later official editions of that instrument. That the historian of the future, who shall have to deal with the rise and progress of the association, may not be misled, it is deemed proper to here emphasize the fact that though the word "arbitration" was a part of the term referred to in the original draft of the first constitution it was eliminated by the action of the first convention, which had to pass upon the draft submitted by the joint committee, and which consummated the amalgamation of the several unions of iron and steel workers; and this elimination was done in response to the almost general demand of the membership that the foundation principle of the organization should be conciliation. There is no doubt that the reasonable measure of success with which conciliation met in the Sons of Vulcan had greatly to do with the adoption of this method by the Amalgamated Association, for it had been in practice in the lesser organization since 1865, when the first scale of wages was adopted, and it became evident that with stronger organization and the elaboration of the scale and other items of practical detail the best results might be anticipated. Arbitration had passed from the view of organized iron and steel workers as a probability of sufficient promise to merit mention. It was never in practice with them, and there is now no reason to suppose that under any probable circumstances the association would accept it even as a temporary expedient. Briefly stated the objection to this method is that it may call in to decide issues of a trade character parties who are not expert, or who are wholly ignorant of that trade; it is prone to be, as the name indicates, arbitrary, and consequently lacking the amicable quality that it is desirable should be the feature in all arrangements between employ-

ers and employés, and that if an arbitration prove, as it may, peaceful, it is not arbitration but is conciliation. Arbitration may leave ill feeling, dissatisfaction and temptation to breach of the award. Conciliation means what the word implies, and in practice its definition has been consistently applied, as note the testimony from a pamphlet on "Labor Differences and Their Settlement," by Mr. Joseph D. Weeks, who for years has been secretary of the Western Iron Association, and in his official capacity has attended the conferences of the Amalgamated Association with the Manufacturers' Association, and who therefore has been cognizant of the details of the maintenance of agreements made by those conferences. He says:

"When an agreement is reached, or an award made and accepted, there is little doubt as to its being loyally observed. The wages of certain classes of skilled labor in the iron mills of Pittsburgh have been regulated since 1865 by what are termed 'conference committees,' which are really temporary committees of conciliation. In these twenty-one years there is not a single instance of the violation of an agreement once reached. Even when, as in one case, there has been such a change in values as to lead the manufacturers to suggest a change in the agreement favorable to the workmen, it was rejected by the employés on the ground that they would not consent to the least violation or change in the agreement, even in their own favor."

The same authority in stating "some objections to arbitration," notes that from the above principle may be infered that the right to decide questions which arise between employer and employé lies with the employer. This, Mr. Weeks—who is writing as an economist—denounces as "a theory that society for its own safety should not tolerate for a moment. Labor," he says, "is no longer in a state of industrial subjection, nor does it acknowledge even in theory that its wages come out of the employers' pocket."

"* * * * * when capital invests and the employer undertakes and labor is brought in that production may result, then capital and the employer, equally with labor, must submit to the conditions into which they have voluntarily entered. The workman is a partner in production; his labor under the present methods is one of the three indispensable factors in production, and as such is entitled to participate in the decision of questions that affect his interests, and to which he is a party. If this is true the objection urged is not valid. The decision of these questions is not with the employer alone."

Another objection he notes—and these objections are given space here as relating to that part of the history of the amalgamated association which bears on the cause of the expurgation of the term "arbitration" from the original draft of the constitution of the organization—is "that arbitration is not a success; that it does not settle labor differences, nor prevent strikes and lockouts." In discussing this Mr. Weeks says:

"That the labor or wages question is not settled is true. It never

will be while the present relations of employer and employed continue. Arbitration never professed to settle it, but it is on the road to the place and time of settlement. Nor does arbitration profess to prevent strikes and lockouts unless the parties to them permit it to have the opportunity to do so—that is, unless it is called in to settle them."

The older members of the amalgamated association comprehended the merits of the two methods, arbitration and conciliation, long before Mr. Weeks' interesting and able essay was published, and have in a dozen years seen for themselves, in the results of the conferences of their own organization with that of the employers, the contrast between the two as it appears in the extracts printed herewith from Mr. Weeks' pamphlet. The testimony is that not since the inception of conciliation in 1865, has there been a single instance of disloyalty to an agreement. Such practical testimony "under their noses," as it were, compared with results of arbitration that have been made public from time to time, in the same period, could not but confirm the decision of the convention of 1875 as to whether or not "arbitration and conciliation" should be amended so as to sink "arbitration" finally, and concentrate the strength of the organization on conciliation as the recognized policy.

Pursuing the topic one step farther, it is not inexcusable to again refer to the fact that agreements "once reached have in every instance been faithfully observed, and if any change in the terms of an agreement has been desired this was accomplished by means named in the terms." Mr. Weeks' only qualification of this, if it may be called a qualification, is in the following: "a possible exception to this statement is in cases where certain classes of employés working under these scales have struck, though there was no question as to their wages, to assist in enforcing the demand of some other class of labor, —as when the rollers would strike to assist the puddlers to obtain a scale; but even in such cases it should be stated that the workmen do not regard it as in any fair sense a violation of their agreement." There should now be coupled with this quite mild exception the information that, with the improvement of the machinery of organization has come the elimination of causes of such differences as are referred to in the foregoing. Indeed, it may be asserted that a salient feature in the history of the consolidated organization of the iron and steel workers, is the disposition to apply the suggestions that have come from experience, to the rejection of imperfect parts of the plan, and the substitution of details that have seemed to promise betterment, having in view justice to all concerned.

The Latest Constitution.

To understand the methods of the association as a business body needs only a glance at the provisions of the latest amended constitution, which, it should be mentioned, also gives a fair idea, by com-

parison with the first constitution, of the strides made toward thoroughness by this truly notable organization.

The president has authority to visit any sub-lodge and inspect its proceedings and if a sub-lodge refuse to place any book or other information in its possession in his hands whenever required, he may fine or suspend the offending sub-lodge and report such action to the secretary of the national lodge, who in turn reports the same to the vice president of the district and to all other sub-lodges. The president is responsible to the association in national convention for his official acts. In time of contention also he is the controlling power, and on important occasions has the benefit of the advisory assistance of the other general officials.

The vice presidents are delegates-at-large to the annual convention and are the presidents' deputies in their respective districts, and each has three deputies who report to him every three months. Representatives to the national convention retain their representative capacity for one year, and one of these of each sub-lodge must report quarterly to the general office as to business matters of the lodge, and weekly to the official organ of the association, *The National Labor Tribune*, all important news as to the running of their respective mills.

National conventions are held annually on the first Tuesday in June in Pittsburgh. Six weeks prior to the assembling of the convention a programme of business must be sent to each sub-lodge by the secretary of the national lodge. The convention cannot entertain any resolution bearing on a question of law or prices except such question has been submitted previously to the sub-lodges as stated.

Revenue is provided as described in reference hitherto made to the first constitution, there having been no change in this particular.

The differences between employers and employés are provided for in various ways. In each district there is an executive committee consisting of the vice president, his deputies and the president of the lodge where any grievance may have arisen, except for the signing of the yearly scales. But no person is allowed to serve as a member of the executive committee who is personally or directly interested in such grievance. It is the duty of the vice president to examine, in conjunction with the mill committee, into both sides of any grievance that may have arisen before calling the executive committee together to legalize a strike. When a strike has been legalized the vice president must notify the general office of the same, in writing; but no sub-lodge is permitted to enter into a strike except authorized by the executive committee of the district.

Each sub-lodge must have a mill committee consisting of representatives of each department. It is the duty of this committee to superintend and guard the interests of the association in the several departments thus represented, and when it becomes apparent that any advantage is being taken of the laws, or of any member of the

association, and the committee of the department where this occurs has failed to adjust the difficulty, then the committees or the other departments, in conjunction with the committee having the grievance, must jointly exhaust every effort with the manager of the works to settle the difficulty before reporting the case to the vice president of the district. When the joint committee, after using all honorable means to bring about a settlement of the difficulty has failed, the committee must call a special meeting of the lodges in interest, jointly, and all members of those lodges working in the mill affected must be notified by the mill committee to attend. At such special meeting the grievance pending must be explicitly stated by the members of the joint committee, and if the joint meeting consider the grievance sufficient, the corresponding representative of the lodge having the grievance shall, by instruction of his lodge, under its seal and in no other manner, notify the vice president of the district, or division, and work shall continue until the vice president has investigated the case. This officer, in conjunction with the executive committee, may declare a strike, and may also declare it at an end if the best interests of the association demand. In either case prompt report to headquarters is required, and then the president, in cases of necessity, has an opportunity to try his personal powers as a peacemaker.

Wherever practicable, steps must be taken to provide a scale of prices for every trade or calling in each district represented in the association. When it is found necessary that the scale of prices governing any department of a mill or factory needs revision, such department must submit in writing to the sub-lodge the alterations desired in the scale, on or before the first meeting in the month of March, and each lodge must then consider such desired changes, shall vote by written ballot thereon, and report the result in writing to the general office. When all desired alterations to the scales are received at the general office, which must be by the first Tuesday of April, the same are printed in a pamphlet, together with any suggested amendments to the laws, and a copy is sent to every sub-lodge six weeks prior to the meeting of the succeeding annual convention. These changes, etc., are discussed in the sub-lodges, and the action taken is carried by the delegates to the national convention. All suggestions pertaining to the scale must be referred to the wage committee, which is called together three or more days before the meeting of the convention, and in order that this committee may act understandingly, the corresponding representative of each lodge must send to the general office, two weeks prior to the meeting of the committee, a statement giving the condition of their mill, the amount of work done the past year, the feeling of the members of the lodge regarding wages for the next year, stocks in hand, if any, and what kind, and any other information bearing on the subject.

To change the basis of any scale requires a two-thirds vote of all the delegates present at the annual convention. Except the scale is signed in the conference of employers and employés, three copies must be sent out to each lodge by the general secretary, and when signed, one is kept by the firm, one by the sub-lodge, and the third is sent to the general office of the association. The scale, unless signed in conference, must be presented to the manufacturers for signatures by members of the mill committee representing each department of the mill, one week prior to July 1, which is the commencement of the scale year; and notice be given by them that unless the scale of prices be signed on or before June 30, all departments of the mill or factory will cease work, except roll turners and engineers; but when a stock of muck bar is on hand, and the company does not desire to boil iron, the finishing mills must run on after the scale is signed, though when ready to boil, every man must receive his own job, or if he does not, the mill will cease work until he does.

Except on questions of wages regulated by a scale of prices, two weeks' notice is required from employers before a reduction can take place, and two week's notice must be given when an advance is requested. When it is found beyond a doubt that any member of the association is working below the prices established by it, the men in such mill must cease work until such prices are rectified. No member of the association is allowed to change or alter rules existing in any mill before submitting the desired change to the lodge having control of the department for which the change is intended; and if a majority of all members of the lodge vote in favor of the change, the mill committee must notify the superintendent before the same goes into effect.

The laws and rules inculcate sobriety while at work and attention to the interests of employers, and specify that departures from this will not be supported by the association.

An important provision of the laws is that any person employed as foreman, puddle boss, superintendent or general manager of any mill or factory, or holding any of these positions, together with a situation at any of the trades having membership in the association, shall not be eligible to or retain membership. In compliance with this rule, when a member is promoted to a bosship he drops his membership, it being recognized that a boss is necessarily in the interests of the employer, and the association policy opposes the individual "serving two masters," as being a bad outlook for either the one or the other. On numerous occasions members have been thus promoted, and invariably have received kindly God-speed from the general office.

The constitution of the national organization comprises granted powers, and the sub-lodges may rule themselves in any manner that meets the approval of the majority of each so long as the general laws of the association are not in conflict. It was in accord with this prin-

ciple that on the 13th of December, 1887, the association affiliated with the American Federation of Labor, a national organization of trades unions, built on the same general plan as the Federal union of States. It was at the second annual convention of the Amalgamated Association that the president, Captain Joseph Bishop, moved in favor of a federation of the trades-unions, but the efforts made were without tangible result. In 1886 the national convention was invited by the Federation, which was then starting out as an organization, to affiliate, but a clause of the declaration of principles of that body opposed protection of home industries, and, in consequence, the invitation was not accepted. This clause was afterwards expurgated, and the national convention of 1887 decided to join the Federation. President Weihe, Secretary Martin and Trustee Nutt attended the annual convention held in Baltimore, Maryland, and as accredited delegates, formally affiliated their association with the national organization of the trades-unions on the date heretofore mentioned. The Federation does not assume to interfere with the several unions composing it; it has no authority other than to advance the general good, and action on specific cases must be after the delegation of such power by the union or unions directly concerned, and only for the time and occasion. The several unions maintain their independence in the transaction of their own affairs as before the organization of the Federation.

The Scale as a Peacemaker.

A theory of the association is that the workman is entitled to a fair living in return for his labor, and the practice of this has reduced it to a formulation, a modern adage, now common in the associated iron and steel trades: "Let us secure fair wages and prices will take care of themselves." Elimination of redundancy would present this in brief shape: Fair wage means fair price. The superficial observer would be inclined to regard this form as "placing the cart before the horse," but while it is true that an advancing market renders comparatively easy the securing of advancement of the compensation of labor, unquestionably the price lists are potently affected by the wages workmen may demand and possess the power to enforce. On a threatened market, or on a market that is declining, organized labor has greatly to say as to the potency of the threat or the extent of the decline. Judiciously managed, association may and frequently has prevented market demoralization. In the experience of the Amalgamated Association it has been found that "card cutting," prevalent not so many years ago, has been quite thoroughly discouraged by organized labor. Individual manufacturers who were prone to secure contracts by quiet offers of recession of the recognized price, discovered that the workers' organization would not regard such policy as entitled to support at the expense of wages. The organization demanded that the employers' business be conducted with at least as much skill as that of associated

labor. At one period "card cutting" had become so considerable an obstacle to the maintenance of fair prices that the general office of the Amalgamated Association, offered to discipline any mill firm in the association jurisdiction that the manufacturers' association would report officially as unfair in the matter of maintenance of the cards of prices. The stand taken by the Amalgamated Association on "card cutting" was in pursuance of the policy heretofore referred to, and which is epitomized in the saying: Fair wage means fair price. The organization declined to retire from the "fair wage" principle, and in consequence unfair price was compelled to retire from the practice of the manufacturer, no difference how greatly inclined he might have been to take surreptitious advantage of his straightforward brethren of the manufacturers' organization. In the estimation of the associated workers there was no reason why employers should not practice organization as faithfully as the employés, and get as reasonable prices from consumers as the workmen got for their labor.

The scale was the great stride toward fair wages, and should have been an equally long step toward fair prices, and so it would have been had the manufacturers been as true to each other as the workmen were faithful to their organization. But the scale certainly aided the workmen to improve organization, and when their strength began to develop palpably, the employers noted the necessity for an organization of equal strength. The opposition to labor union began to take wing about this time, and it gradually arose for flight as the workmen's union gathered sinew and business sense, until at last manufacturers who had been most rancorously opposed to unionism found it necessary to drop their opposition as something too antique for application to modern progress, and turn over a new leaf on which was emblazoned "organization, association, union." This was a revolution in sentiment since the 12th day of April 1858, when a half-score of boilers met so secretly at the "Our House," and organized the Sons of Vulcan, and dared not propagate its tenets for dire fear of the employers' blacklist, a list which at that date had the support of the manufactures generally. Now, after years of experience of organization it is fully recognized that there is no common sense policy other than thorough organization of labor and of industrial capital whereby to keep justice, peace and prosperity in sight.

A means by which to assure the "fair living" to which associated workmen regard themselves as being entitled, is a wages' scale based on a minimum wage, and this method has after years of ups and downs recommended itself finally as the wise plan. It has not only had the effect to secure to the workmen a comfortable living, but has been beneficial as a curb to unnecessarily low prices. The first scale, as mentioned heretofore in this paper, was gotten into practical shape by Miles S. Humphries, then president of the Sons of Vulcan, at the suggestion, of B. F. Jones, senior member of Jones and Laughlin, of the American

Iron Works, Pittsburgh. It was adopted by the first conciliatory board, which met twenty-three years ago, and was as follows:

Memorandum of Agreement,

Made this 13th day of February, 1865, between a committee of Boilers, and a committee from the Iron manufacturers, appointed to fix a scale of prices, to be paid for boiling pig-iron, based on the manufacturers' card of prices, it being understood either party shall have the right and privilege to terminate this agreement by giving ninety days', notice to the other party, and that there shall be no deviation without such notice. When the manufacturers' card of prices are at the rate named below, the price for boiling shall be at the prices opposite, per ton of 2,240 pounds:

Manufaeturers.	*Boilers.*
8½ cents per pound,	$9 00
8¼ " "	8 75
8 " "	8 50
7¾ " "	8 25
7½ and 7¼ cents per pound,	8 00
7 " 6¾ " "	7 50
6½ " 6¼ " "	7 00
6 " 5¾ " "	6 50
5½ " 5¼ " "	6 00
5 " 4¾ " "	5 75
4½ " 4¼ " "	5 50
4 " 3¾ " "	5 00
3½ " 3¼ " "	4 75
3 " 2¾ " "	4 50
2½ cents per pound,	4 00

When this scale was adopted common bar iron was selling at seven and one-half cents per pound, which gave the boilers eight dollars per ton, and this was regarded by them as a very satisfactory figure. But there came almost immediately rapid fluctuations of a downward trend. The civil war ended in the following April and markets were badly affected; bar iron declined three and one-half cents to four cents per pound by July, which reduced the price for boiling to five dollars per ton. This unexpected recession was a severe test of the infant scale. The boilers were of the opinion that the minimum had been placed too low and their organization gave the required ninety days to terminate the agreement. At the expiration of three months the card price had recovered to a point corresponding with a six dollar rate for boiling. They demanded and got eight dollars per ton, which rate prevailed from October, 1865, to October, 1866, when they demanded nine dollars, which was conceded. In December they were served notice of a reduction of two dollars per ton, which was refused

and a lockout lasting until May, 1867, was terminated by the manufacturers' withdrawal of the reduction.

At the close of this serious episode the boilers' organization asked for a conference with the manufacturers for the purpose of arranging a scale that would prevent further differences. This suggestion was accepted and wages were arranged specially for the time up to the following September, upon the 15th day of which month it was agreed that a scale should go into effect. This scale provided a twenty-five cent reduction or advance in the price of boiling for each corresponding change of a half cent on card rates, the agreement to be terminated upon thirty days' notice of either party. It was in 1871 that it was decided to make the changes by tenths, a tenth of a cent per pound advance or recession in the card to carry ten cents advance or recession per ton for boiling. Finished bar iron declined from five cents per pound in January, 1873, to two and one-half cents per pound in the autumn of 1874; demand had drooped and the prospects were bad. In October the manufacturers requested a conference and gave the thirty days' notice of termination of the scale agreement. They also demanded a reduction of one dollar per ton on the basis of the scale, which would have been, as they put it, a reduction of the basis. After several conferences the boilers proposed a compromise, but the manufacturers declined and a lockout followed of five months duration. This was brought to a close by the acceptance of the boilers' terms and the signing of a scale that provided ten cents per ton advance or recession with every two-tenth cent per pound advance or recession in the price of common bar iron and the thirty days termination clause. In October, 1875, six months after this agreement was made, the manufacturers served notice of termination and called for a conference.

The market was very much demoralized; prices were at almost any figure except a reasonable one, and card cutting was rife. The price list had receded two and a half cents, and there was no outlook that could be defined. From the date of the panic of 1873 on for several years, was a period that tried men's souls and tested to the utmost the new method of the arrangement of wages. The conference of 1875 discussed means of tiding over the hard times. A special rate of wages for an especially depressed condition was the object. The manufacturers proposed $4.50 per ton, and early in December a compromise was reached by which the rate was made $5 until the 13th of that month, and $4.75 for the two months following. At the expiration of this arrangement February 14, 1876, the conference conventions reconvened, but unable to make an arrangement, the committees separated, so utterly "at sea" that it was understood each firm was to proceed unguided and untrammeled by previous associations and restrictions. The boilers had profited by their union experience and were quick to determine that $4.75 per ton was the lowest price they

Read "United Sons of Vulcan" for "Amalgamated Association."

To be inserted in G 17, opposite 9th line from top.

would accept. In May another conference was held, but hard times still lingered and there was no definite conclusion except "to agree to disagree." The workmen endeavored to have the scale non-terminable for a twelve months, the scale year to date from the 1st day of June. In pursuance of this the scale was accompanied by notice that unless it was signed by May 31, work would cease on that date. The proposition was rejected, but after two weeks it was accepted, and for the first time in the history of this industry there was some assurance of work continuing throughout a twelve-month. Thus the Amalgamated Association scored a triumph that has remained with the organization ever since, and which has been of the most material advantage to the members, to their employers, and to the public, and has been one of the active factors in building a reputation for the association second to that of no other labor organization in the world.

In June, 1877, the yearly scale again went into effect; also in June, 1878 and 1879. In June, 1880, a demand was made for an advance of fifty cents per ton on the two and-a-half cent basis, and after a few days stoppage the point was conceded. This scale was in operation for five years, having been reënacted at each June conference; but in 1885 the minimum was reduced to $5 per ton for boiling on a two-cent card. This was changed in the scale of 1887–8 to $5.50 per ton on a two-cent base.

The finishers had no scale previous to the amalgamation except a guide mill schedule of rates adopted on April 2, 1872. The association prepared a bar-mill scale in 1879, which was adopted on the 17th of October of that year. The conference of the committees of the amalgamated association and the manufacturers' association adopted, June 26, 1886, at Pittsburgh, a scale of prices which included all details of boiling, muck-mill, bar and nail-plate mill, guide, ten inch, hoop and cotton-tie mills, with the different departments of nut iron, channel iron, T iron, angles, clip or wagon strap, hame iron; also plate and tank mills, sheet mills and nail cutting; in fact all the production of the finishing departments.

The base of this scale was, as were the finishers' scales previously in force, the same as the boilers' scale. It should not, however, be inferred from the foregoing that the finishers' scale was at any time at a stand-still. There were yearly additions made to it, but the notable ones were those to which there is reference herewith. The extent of the progress made may be understood by a comparison of the scales of prices published from year to year by the association. The boilers' scale has each year taken a single page, no more no less. The scale of 1881–2 was a pamphlet of fifteen pages of schedules. It included boiling, muck-mill, bar and nail-plate mills, guide, ten-inch and hoop and cotton-tie mills, sheet mill, plate and tank mills, scrapping and busheling, heating slabs and shingles, knobbing, tin and block-plate

mills, rolling muck-bar and finished iron for sheet bar at Apollo, Leechburg and Demmler, Pa., sheet-mill hands' scale, roughing and catching on sheet and jobbing mills, and nail department. The scale of 1887–8 is a pamphlet of twenty-three pages, and includes in addition to the foregoing, a pipe iron scale, the Carnegie Bros. & Co's scale, the continuous train scale, and the scale for spike-cutting. There are not many additions, the schedule of 1881–2 having included fourteen items, and that of 1887–8 eighteen items, but details have increased, and besides the iron schedule there was issued in 1887, a schedule of wages in mills making Bessemer and open-hearth steel and wire-rods. Thus it is seen that the first scale of 1865 had progressed from a single page of record to forty pages in 1887. This was due (1) to accessions of branches of the iron and steel industries that existed twenty years ago, and (2) to new processes of manufacture, improvements in machinery and additions to the list of articles of production.

The "memorandum of agreement," of February, 1865, may be compared with the latest at this writing, namely, that of June 30, 1887, as follows:

Memorandum of Agreement.

PITTSBURGH, PA., *June 30, 1887.*

We, the undersigned committees, appointed by, and representing the Association of Manufacturers of Iron, Steel and Nails, and the National Amalgamated Association of Iron and Steel Workers, do hereby agree that the following scales of prices, based upon the Western Iron Association's card of prices, shall govern the wages of the several departments as herein stated, for one year, commencing July 1st, 1887, and ending June 30th, 1888.

It is further agreed that no scale shall go below the price paid on the Western Iron Association's card selected as a basis.

It is understood,

First—That in mills running on specialties, separate contracts may be made between the manufacturers, rollers and heaters, without interfering with this agreement.

Second—That iron mills (except sheet mills) working steel shall pay price and one-half price for steel, but this shall not apply to mild steel, that is, working that steel of which the output of the mill shall be as great as when working iron of the same sizes; but when the output of steel is but three-fourth of the output of iron, the rule price and one-half price shall apply.

Third—That in mills now giving extra help to the heater, the usage now in vogue shall continue; but in mills where no help has been given it is agreed that on all iron or steel weighing over one hundred and sixty pounds, extra help shall be furnished to the heater, the same to be paid by the company.

This was signed by the nineteen members of the "Committee of Association of Manufacturers of Iron, Steel and Rails," and the "Committee of Amalgamated Association of Iron and Steel Workers," then forming the conference committee.

Before proceeding further with the consideration of the scale as it is after twenty-two years, it should be stated that one of the recent changes was that of the scale-year. At the tenth annual convention, 1885, a resolution "changing the time of the expiration of the scales from May 31st to June 30th," was unanimously adopted and the president instructed to consult with the Manufacturers' Association relative to acquiescence in this alteration. After such consultation, Secretary Weeks, of the Manufacturers' Association, November 24, 1885, notified the general office of the Amalgamated Association, that he had been authorized to agree to the extension in accordance with the resolution. The reason for this change was that it was not desirable to have the new scale of each year considered in conference during what had become habitually the approach of the "dull season."

The boiling scale of the first conciliatory conference, as heretofore produced in this paper, may with profit to the understanding of the general subjects of wages scales be compared with that of 1887–8. It is as follows:

Boiling.

Western Iron Association Card Rates.	Boiling per ton, 2,240 lbs.	Western Iron Association Card Rates.	Boiling per ton 2,240 lbs.
2 cents, ... Bar Iron.	$5 50	3 3-10 cents, ... Bar Iron.	$7 10
2 1-10 cents, ... "	5 60	3 4-10 cents, ... "	7 25
2 2-10 cents, ... "	5 70	3 5-10 cents, ... "	7 40
2 3-10 cents, ... "	5 80	3 6-10 cents, ... "	7 57
2 4-10 cents, ... "	5 90	3 7-10 cents, ... "	7 75
2 5-10 cents, ... "	6 00	3 8-10 cents, ... "	7 92
2 6-10 cents, ... "	6 10	3 9-10 cents, ... "	8 10
2 7-10 cents, ... "	6 25	4 cents, ... "	8 30
2 8-10 cents, ... "	6 37	4 1-10 cents, ... "	8 50
2 9-10 cents, ... "	6 50	4 2-10 cents, ... "	8 70
3 cents, ... "	6 65	4 3-10 cents, ... "	8 90
3 1-10 cents, ... "	6 80	4 4-10 cents, ... "	9 10
3 2-10 cents, ... "	6 95	4 5-10 cents, ... "	9 30

1. One dollar per ton extra for all castings and runners over seventy-five pounds in one piece.
2. One dollar per ton extra for hot ore fix.
3. For cast iron swarth worked on cinder bottom, the price per ton shall be the straight price paid for boiling.
4. For half wrought and half cast iron swarth, worked on cinder bottom, the price to be fifty cents per ton below the straight price paid for boiling.
5. For wrought iron turnings, worked on cinder bottom, $3.57 per ton; the price for working swarth or turnings to advance and decline in the same proportion as the boilers' scale.
6. Fifty cents per ton extra for boiling half pig iron and half pot metal and stove plate.
7. Fifty cents per ton extra for all metal boiled, also for swarth and turnings worked on hot cinder fix.
8. For all light scrap worked in a boiling furnace the same price shall be paid as that for working wrought iron turnings; this to cover

hoop, wire, sheet and what is known as Norway scrap; this scrap to be cut from eight to ten inches in length for charging.

It will be observed that this scale differs from that of 1865 in the percentage of advance and recession, and in the fact that experience has suggested some slight items of detail looking to the perfection of the scale. To illustrate the thoroughness of the finishers' scales it will be sufficient to reproduce only the scales that come under the head of guide, ten-inch, hoop and cotton-tie mills, and the heating of bar and rail-plate mills.

Guide, Ten-inch Hoop and Cotton Tie Mills.

It is agreed that the base price at a two (2) cent Western Iron Association's card shall be the straight two dollars and ninety cents ($2.90) per ton for rolling iron or steel on a guide, ten-inch, hoop or cotton-tie mills, with two (2) per cent. additional for each one-tenth ($\frac{1}{10}$) advance on said card from two (2) to a two and five tenths ($2\frac{5}{10}$) cent card, and for each one-tenth ($\frac{1}{10}$) advance or decline above the two and five-tenths ($2\frac{5}{10}$) cent card three (3) per cent. shall be added or deducted as the case may be.

$\frac{3}{16}$ rounds and squares,	$9 50
$\frac{7}{32}$ rounds and squares,	7 63
$\frac{1}{4}$ rounds and squares,	5 90
$\frac{9}{32}$ rounds and squares,	5 15
$\frac{5}{16}$ rounds and squares,	4 40
$\frac{3}{8}$ and $\frac{7}{16}$ rounds and squares,	3 50
$\frac{15}{32}$ rounds and squares,	3 35
$\frac{1}{2}$ and $\frac{9}{16}$ rounds and squares,	3 20
$\frac{5}{8}$ and upwards,	2 90
$\frac{1}{2}$ by $\frac{3}{15}$ oval,	5 90
$\frac{3}{8}$ and $\frac{7}{16}$ oval,	5 30
$\frac{1}{2}$ and $\frac{9}{16}$ oval,	4 10
$\frac{5}{8}$ oval,	3 50
$\frac{3}{4}$ oval and upwards,	2 90
$\frac{5}{16}$ half rounds,	9 50
$\frac{3}{8}$ half ovals and half rounds,	8 90
$\frac{1}{2}$ half ovals,	5 30
$\frac{5}{8}$ half ovals and half rounds,	4 10
$\frac{3}{4}$ half ovals and half rounds,	3 50
$\frac{7}{8}$ half ovals and upwards,	2 90

Nut Iron.

$\frac{5}{16}$ by $\frac{1}{4}$,	$5 90
$\frac{23}{64}$ by $\frac{1}{4}$,	5 90
$\frac{3}{8}$ by $\frac{1}{8}$ and $\frac{1}{16}$,	12 50
$\frac{3}{8}$ by $\frac{1}{4}$ to $\frac{3}{16}$ and $\frac{7}{16}$ by $\frac{1}{4}$,	5 30
$\frac{15}{32}$ by $\frac{1}{4}$,	4 70
$\frac{1}{2}$ by $\frac{1}{4}$, or thicker, on two high rolls,	4 70
$\frac{17}{32}$ by $\frac{1}{4}$, or thicker, on two high rolls,	4 55
$\frac{9}{16}$ by $\frac{1}{4}$, or thicker, on two high rolls,	4 40
$\frac{19}{32}$ by $\frac{1}{4}$, or thicker, on two high rolls,	4 25
$\frac{5}{8}$ and $\frac{11}{16}$ by $\frac{5}{16}$, or thicker, on two high rolls,	3 80
$\frac{13}{16}$ by $\frac{3}{8}$, or thicker, on two high rolls.	3 34

$\frac{21}{32}$ by $\frac{3}{16}$,	$3 95
$\frac{23}{32}$ by $\frac{3}{16}$,	3 65
$\frac{3}{4}$ by $\frac{5}{8}$ to $\frac{3}{16}$,	3 50
$\frac{25}{32}$ and $\frac{13}{16}$ by $\frac{3}{16}$,	3 35
$\frac{7}{8}$ by $\frac{3}{16}$ to $\frac{3}{4}$,	3 20
$\frac{15}{16}$ by $\frac{3}{16}$,	3 05
$\frac{1}{2}$ to $\frac{5}{8}$ by $\frac{3}{16}$ to $\frac{3}{8}$ and $\frac{9}{16}$ by $\frac{1}{4}$ (rolled on 3-high grooved rolls),	4 10
1 inch by $\frac{3}{16}$ and upwards,	2 90

Channel Iron.

2 inches and upwards,	$2 90
$1\frac{1}{8}$ to 2 inches,	3 20
1 inch,	3 50
$\frac{7}{8}$ by $\frac{3}{8}$,	3 80
$\frac{7}{8}$ by $\frac{5}{16}$,	5 00
$\frac{5}{8}$ by $\frac{5}{16}$,	9 50
$\frac{3}{4}$ by $\frac{5}{16}$,	7 70
$\frac{5}{8}$ by $\frac{3}{8}$,	4 10
$\frac{3}{4}$ by $\frac{3}{8}$,	3 50

All channel, No. 10 and lighter, shall be paid for at hoop prices.

T Iron.

$1\frac{1}{2}$ and upwards,	$3 20
$1\frac{1}{4}$,	4 10
$1\frac{1}{8}$,	4 70
1 inch,	5 30
$\frac{7}{8}$,	6 80

Angles.

$1\frac{1}{2}$ and upwards,	$2 90
$1\frac{1}{4}$ by $\frac{3}{16}$,	4 10
$1\frac{1}{8}$ by $\frac{3}{16}$,	4 10
1 by $\frac{1}{8}$,	4 10
$\frac{7}{8}$ by $\frac{1}{8}$,	4 70
$\frac{3}{4}$ by $\frac{1}{8}$,	5 90
$\frac{5}{8}$ by $\frac{1}{8}$,	6 80

All angles under $\frac{1}{8}$ in thickness 10 per cent. advance on above prices.

All angles of unequal sides shall be divided; for instance, $1\frac{1}{2}$ by 1 inch shall be classed with $1\frac{1}{4}$ angle.

Clip or Wagon Strap.

$\frac{5}{8}$,	$3 20
$\frac{9}{16}$,	3 50
$\frac{1}{2}$,	3 80
$\frac{7}{16}$,	4 10
$\frac{3}{8}$,	5 90
$\frac{5}{16}$,	7 09
$\frac{1}{4}$,	8 89

Hame Iron.

$\frac{5}{8}$ by No. 10 and lighter,	$9 50
$\frac{3}{4}$ by No. 10 and lighter,	7 70
$\frac{7}{8}$ by No. 10 and lighter,	5 90
Bands rolled specially for bundling,	5 90

Ten-Inch Mill.

$\frac{1}{2}$ and $\frac{9}{16}$ rounds and squares,	$3 20
$\frac{5}{8}$ and upwards, rounds and squares,	2 90
$\frac{5}{8}$ ovals,	3 50
$\frac{3}{4}$ ovals and upwards,	2 90
$\frac{3}{4}$ by $\frac{5}{8}$ to $\frac{3}{16}$,	3 50
$\frac{7}{8}$ by $\frac{3}{4}$ to $\frac{3}{16}$,	3 20
1 inch and upwards,	2 90
$1\frac{3}{4}$ and upwards hoop by $\frac{1}{8}$	3 35
Bands rolled specially for bundling,	5 90
Billets,	2 90

Billets $\frac{9}{16}$ and lighter shall be paid for at guide mill prices and no percentage off.

Hoop and Cotton Tie Mills.

$1\frac{3}{4}$ and upwards by No. 10,	$3 35
$1\frac{1}{2}$ and $1\frac{3}{8}$ by $\frac{1}{8}$,	3 50
$1\frac{1}{4}$ and $1\frac{1}{8}$ by $\frac{1}{8}$,	4 10
1 by $\frac{1}{8}$,	5 30
$\frac{7}{8}$ by $\frac{1}{8}$,	5 90
$\frac{3}{4}$ by $\frac{1}{8}$,	7 70
$\frac{5}{8}$ by $\frac{1}{8}$,	9 50
$\frac{13}{16}$ by $\frac{1}{8}$,	6 80
$\frac{11}{16}$ by $\frac{1}{8}$,	8 60
$\frac{9}{16}$ by $\frac{1}{8}$,	10 70
$\frac{1}{2}$ by $\frac{1}{8}$,	12 50
Clips,	3 50
Slats,	4 10
Finger,	3 50
Cotton tie,	4 10

1. It is understood that the price for rolling cotton ties out of muck billets shall be fifty (50) cents per ton less than above rates; but when so using muck billets during the three summer months—July, August and September—the company shall pay heater's helper at the cotton tie furnace, and an extra rougher and catcher at the cotton tie rolls; that is, one man at the rolls who shall assist both rougher and catcher.

2. Four hundred and ten (410) bundles of cotton tie shall constitute a day's work for every turn in the week except Saturday, and for Saturday three hundred and twenty-five (325) bundles of cotton tie shall constitute a day's work.

3. All sizes made from a regular one and a half inch, and lighter, reworked billet made from all muck iron and cut to regular weight, fifty cents per ton less be paid.

4. All half ovals below regular gauge (one-fourth the thickness of its width) to be classed as hoop prices.

5. Fifty cents per ton for cut hoops, all sizes.

6. Any smaller sizes, not enumerated in the ten-inch scale, are paid the same as guide mill prices.

7. The prices paid for making odd sizes not enumerated in the scale shall be the mean between the next higher and lower prices.

8. Heaters receive one fourth and roughers, between them, one-fourth, and the night turn roller, one-fifth.

Bar and Nail Plate Mills (Heating).

WESTERN IRON ASSOCIATION CARD RATES.	Bar Rolling and heating, 2,240 per ton.	WESTERN IRON ASSOCIATION CARD RATES.	Bar Rolling and heating, 2,240 per ton.
2 cents,	$0 70	$3\frac{1}{10}$ cents,	
$2\frac{1}{10}$ cents,	71½	$3\frac{2}{10}$ cents,	$0 89
$2\frac{2}{10}$ cents,	73	$3\frac{3}{10}$ cents,	91
$2\frac{3}{10}$ cents,	74½	$3\frac{4}{10}$ cents,	93
$2\frac{4}{10}$ cents,	76	$3\frac{5}{10}$ cents,	95
$2\frac{5}{10}$ cents,	77½	$3\frac{6}{10}$ cents,	97
$2\frac{6}{10}$ cents,	79	$3\frac{7}{10}$ cents,	99
$2\frac{7}{10}$ cents,	81	$3\frac{8}{10}$ cents,	1 01
$2\frac{8}{10}$ cents,	83	$3\frac{9}{10}$ cents,	1 03
$2\frac{9}{10}$ cents,	85	4 cents.	1 05
3 cents,	87		1 07

1. All sizes below one and one-half by one-half ($1\frac{1}{2}$x$\frac{1}{2}$) inch flats, one and one-eighth ($1\frac{1}{8}$) inch rounds and one inch squares worked on a three bar mill to be paid guide mill prices; but when such sizes are worked on a two high bar mill ten (10) cents per ton extra shall be paid above straight bar mill prices.

2. Catching on a bar mill shall be five-eighths ($\frac{5}{8}$) of the price paid for rolling on a bar mill.

3. Nail plate rolling six and one-half ($6\frac{1}{2}$) cents per ton less than bar rolling.

4. Heating nail plate to be the same price as bar mill heating.

5. Heaters on 12 inch mill to receive bar mill price, to be paid by the company.

6. All sizes below one inch rounds and seventh-eighths ($\frac{7}{8}$) inch squares worked on a 12-inch mill shall be paid for at guide mill prices.

With such complete schedules of wages as the foregoing indicates, it will readily be conceived that very little room has latterly existed for serious misunderstanding between employers and employés, so far as the price of labor is concerned, and naturally it will be concluded that peace in the iron family is largely due to this preventive, the perfected scales of wages.

The results of progress in processes and machinery were the chief obstacles in the last ten years to perfect agreeableness in conference. The market conditions at times were more or less of a trial to the conferees; but the transitions brought to the front by the galloping speed of science and mechanical genius, made up a series of problems that required skillful handling to avoid friction. But there was skillful handling, and the results strike the unbiased observer as a clear demonstration of the excellence of the means adopted in the iron and steel industries as peace-maker between the representatives of labor and industrial capital.

This satisfactory condition, however, was not brought about in a day, or without tribulations. The association worked up gradually from

the firm foundation of the sliding scale system and conciliation; but time was required to inculcate wholesome appreciation of this method of work. There was occasional disturbance within the camp, and this was insidiously encouraged by outside opposition to the union principle, which opposition fortunately was so undiplomatic as to expose the intention, and thus open the eyes of branches of the industry that were in conflict to the folly of weakening themselves to the advantage of their common opponent. At this time there does not seem to be any of that feeling left over to trouble the association in the future.

There has been the usual experience of "defunct" local lodges, of ups-and-downs in strength, but of late years the tendency has been to steady gradual growth, and the acceptance of the association as a business proposition rather than as a sentiment.

The nailers' secession in 1885 was the only episode of this character. It had become a difficult matter to aid this trade materially. The nailer had been, long ago, the proverbially "busy" man, and was accustomed to good wages. But there came an increase so considerable in productive capacity that nail manufacturers restricted the output. This was carried to the extent of six months' idle time in a single year, yet all the time restriction was in vogue nail machines were being added to old plants, and occasionally a new factory was built. The machines became so numerous that no probable demand of a very prosperous year could have maintained them in work greatly over half-time. The result was obvious; the nailer was no longer "as busy as a nailer," and there was no prospect that he ever would be fully employed. With this condition as a handicap the association found it out of the question to satisfy the craft in their demands for wages, etc., and in the summer of 1885 the nailers in a body withdrew, in convention at Wheeling, West Virginia, and organized the United Nailers of North America. In 1886 President Weihe, in his annual report, stated that the general office had been in receipt of petitions from nailers praying for permission to rejoin the Amalgamated Association. This feeling grew apace during the following year, and early in 1888 the United Nailers concluded that they would return to the protecting roof-tree of the house whence they had wandered in 1885.

The Amalgamated Association has not been a strike-machine; on the other hand its history proves it to have been conducted on the theory that the labor organization which secures to its members their rights with the least friction is the one that recommends itself most highly to workmen, to employers and to the public. How to avoid strikes and lockouts, and at the same time maintain fair wages, is the legitimate problem for the solution of labor organizations. To solve this properly there must be strong organization, which includes as factors, large membership and good faith between members, business-like methods,

and such respect for agreements as shall recommend the association to the employers and to public esteem.

In 1880, when the iron market was what, in the language of the day, was called "booming," there was intimation from employers of a possible advance in the scale maximum; but the amalgamated men treated the semi-overture quite coolly, and returned an intimation that the association would keep its agreement, however high the card price might advance. This is illustrative of its history, and that it will continue thus there is every reason to believe, for the roughnesses of the association-machinery have been rubbed to a polish; the hard knocks of experience have not been lost on men who have always been on the keen lookout for improvements of the method of organized work. The members have always exercised the greatest care in the selection of their general officers, in which they have invariably been fortunate, and this, it appears they have appreciated, inferring from the fact that it has grown into a custom to retain such officials as long as they can be prevailed upon to serve. There have been only three presidents, namely: Captain Joseph Bishop, who resigned; John Jarrett, who declined reëlection after serving several terms, and the incumbent, William Weihe. William Martin has been general secretary ever since the association instituted the office. A few years ago a resolution was introduced at a national convention to limit the continuous holding of national association office to three terms, but this was rejected as contrary to sound business policy, and it would seem from this and the practice of the association in other respects, that it is generally regarded that a member is elected to the general office because of presumption of his fitness, and he is retained there because of his proved fitness, the element of favoritism having little or nothing to do with either selection or retention. This is business; another course would be a specimen of average "politics." No doubt an important factor in the success of the association has been the practice of this policy, for though a system of laws may be excellent, there will be the least effective results unless there be capable execution.

The proof of the pudding is in the eating thereof—and the proof of the utility of labor organization is in the results as shown by the best examples of such association. The Sons of Vulcan was an excellent organization, as organizations were in its time. It experienced from 1867 to 1875 eighty-seven authorized strikes, many of them very bitter. The Amalgamated Association experienced its first important contest in its third year, against the discharge of men for being members of the association. It had a great strike in 1882 on a question of wages, and it had a number of small strikes in the intervals between these large ones. From 1876 to 1885 it was in ninety-three strikes, important and unimportant, seventeen of which were in defence of unionism, and three to compel the signing of the scale. The greater

number of these were in the earlier part of that period. As the association grew in age and experience, and manufacturers more generally recognized the utility of organization, strikes decreased, and latterly there have been quite few contentions that arose to the dignity of strike or lockout. For instance, in the president's report to the convention of 1886 there were only three strikes to note during the previous scale year, and all of these local, each involving a single plant, and all for palpable cause, and all won by the association. In 1887 the record is not less clear. Once the scale is signed there is as close to certainty of a peaceful year as can reasonably be expected in this world of uncertainty. Business men disagree in their transactions and it is not to the detriment of either labors' or industrial capitals' organizations that they haggle over a scale of prices, or that they occasionally disagree as to a detail of the administration of the scale.

The most important strike at this time, early in 1888, is at the Solar Iron Works, Pittsburgh, in defense of what is known as "the one-job rule." This rule was adopted by the national convention of 1887, and is as follows: "This association will not tolerate any man holding more than one job. One furnace, single turn, one train of rolls double turn, one steel smelting gas furnace both turns, or two steel smelting gas furnaces, single turn, to constitute one job, and all are expected to enforce this rule. Any man holding two or more separate jobs, in violation of this section, shall be stigmatized as a "black-sheep." This rule was adopted (1) because the policy of the association is to divide the good things among the members, and secure work for as many as possible; and (2) for the reason that the holding of more than one job may mean that the workman leaves a rebate of his apparently large earnings with "the office," which in effect would be the acceptance of a lower rate of wages than that agreed upon by the scale, and therefore an injustice to employers who would not descend to underhand devices.

The affairs of the association are now prosperous and the outlook quite satisfactory. There are, as has always been the case, non-union mills, but the large majority of these pay the association scale of wages, and very few acknowledge to paying less. Of course such compensation has been won for the non-union men by the association, though without their slightest assistance directly, and despite their indirect opposition to the organization that, incidentally, has served as a bridge to carry them over toll-free from disorganization and demoralization, and presumably inadequate compensation for their labor.

In closing this sketch, the space alloted which forbids the going into details that would have made interesting reading, it is necessary to comprehension of the uses of this great labor organization to state that throughout its history is the important feature of uniformity of wages. A steady, assured, though modest income is regarded by wise men as more desirable than the chances of great income with

"feast or famine." The boilers' compensation has varied in twelve years from $5 to $7 per ton—a range of $2—and by far the longer time it has been $5.50 per ton. Other wages of the several scales of the schedule of prices have been likewise regular. With this item of results may be coupled the fact that peace and good will exist between employers and employés of the organized iron and steel trades; and the Amalgamated Association has the respect and confidence of the communities that know it best.

HISTORY OF KNIGHTS OF LABOR ORGANIZATION IN PENNSYLVANIA.

[This paper was prepared by Mr. John L. Butler, a member of the Knights of Labor, and formerly employed in this Bureau, and whose paper bears evidence of familiarty with the subject. Of course, the writer is solely responsible for his statements and reasonings.—*Chief of Bureau.*]

The origin of the "Noble Order of Knights of Labor" was humble in the extreme. The founder of the order was Uriah S. Stevens, of Philadelphia, who was a tailor by occupation; a man of rare intelligence and gifted with more than ordinary powers for organizing discordant bodies of wage-workers into an harmonious body. He had witnessed the futile efforts of his co-employés to withstand the fall in wages and the temporary but oft-repeated suspensions and stagnations in trade which slowly but surely were pressing skilled and unskilled laborers to a hand-to-mouth existence. He had studied the rise and fall of the ancient guilds and had been a sharer in the temporary triumphs and long-continued disasters of trades associations. The close of the war between the States of the Union brought with it an army of discharged soldiers most of whom were willing and anxious to return to their former employments. The States of the North were in a prosperous condition at this time and the returning soldiers were readily absorbed into the mass of workers. A year later, in the winter of 1866 and the spring and summer of 1867, there was a general depression in trade which had the effect of depriving many thousands of wage-workers of employment. When trade was resumed, wages had declined from ten to twenty-five per cent. The circulating medium had been suddenly contracted in volume by order of the Secretary of the Treasury and this at a time when the people of the Southern States, lately in rebellion, would, in the natural order of events, have effected what would have been equivalent to contraction by sharing with the people of the Southern States in that volume of circulating medium which, during and for eighteen months after the war, was in use in the North alone.

The consequent expansion of private credit incident to a sharp contraction of the currency forced loans and discounts to the highest notch. Rents and taxes had not fallen in the meantime so that the employing classes found themselves between the upper millstone of usurious interest and the lower one of exorbitant rents and taxes based on war prices. Many of this class were forced into bankruptcy,

thereby throwing their employés out of work and into competition with their fellow wage-workers. That wages should decline under such circumstances was natural and that wage-workers should rebel was certain beyond a doubt. The exigencies of the war had produced or developed many new and important changes in the development of the natural resources of the country, so that at the very time when labor was most in need of employment or if employed, in need of higher rates of wages, the introduction of labor-saving machines made it possible for the employer to dispense with skilled workmen whose places could easily and profitably be filled by others of little or no skill. To meet this unlooked for change in the status of wage-workers it was necessary to attempt some form of organization which would enable them to share in the profits which their skill and labor had produced.

The wage-workers of the United States had never been organized. Certain trades it is true had their organizations, but even these trades were organized in spots only. They lacked unity and strength and were powerless to assist their numbers for any protracted period, and the unequal struggle between trades organizations and employers almost invariably ended disastrously to the employés. Trades unions in America were indebted to trades unions in England for their formation and existence and contained all the germs of weakness with but little if any of that power of cohesion incident to their English progenitors. The English wage-workers, deprived of the ballot, had no means of redress other than that afforded by resolutions and petitions passed and presented to Parliament; hence for them to combine in their respective trades against the encroachments of the employers was a necessity born of their condition. Debarred from the right of suffrage they did not investigate those economic conditions which in the last half of the present century more than in that of any other period have forced the employer and employé to advance or to retrograde socially and financially, almost without effort on their part, either for or against conditions at variance with their former surroundings. That such associations should have obtained an abiding place in the United States is a matter of surprise, and that they did, is a matter of fact. The American wage-worker had insensibly drifted into habits of thought regarding the status of labor, capital and money or credit-capital peculiar to his English leader and organizer. Uriah S. Stevens, who was a close observer of men and events, did not fail to notice the enthusiasm with which the American wage-worker joined a trades-union as well as the fact that the skilled workmen became as indifferent to the condition of the unskilled body of laborers as the most hardened employers were supposed to be toward all who were crying for redress of grievances.

He saw three fatal faults in trades organizations, which it was his duty to cure, and though but partial success had been the reward of his

efforts at the time of his death, his keen perception and indefatigable endeavors in this regard laid the foundation for a systematic organization, which in time may remedy the evils against which he complained. The first and most important fault which he discovered in trades organizations was their neglect to recognize the Government, municipal, State and National, as a factor in economic relations existing between man and man, members of the same body politic.

The second was their refusal to recognize the large body of unskilled laborers as freely and fully entitled to representation in labor disputes. Third, a spirit of clannishness which, while leaving each trade free to act for itself, nevertheless deprived its members of that pecuniary and moral support necessary to success in a protracted struggle. Another evil, which later years has remedied in some measure, was the failure of trades organizations to bring the professional man, the clerk and the shop-keeper into harmonious relations and active sympathy with them and their intents and purposes, a stroke of bad policy, well calculated if persisted in, to breed the very class distinctions against which there exists so much complaint at this day. Of the failure of trades-unions to accomplish any lasting benefits to themselves instances beyond number could be mentioned, and where success crowned their efforts, it was either temporary in its results, or if lasting was in a great measure the outcome of some popular movement to which the trades-unions had given an impetus but which grew beyond their control and was fought to success by others unconnected with labor organizations.

As early as 1864 the journeymen plumbers of Boston obtained a decided advance in wages and a shortening of the hours of labor. The union was supposed to be strong, but, by refusing to adopt the advanced apprentices and tenders into their organization, its success, though rapid and great for a time, was followed by reverses which placed its members on a level with ordinary skilled workmen both as to wages and hours of labor. In the iron trade previous to the modern organization of the "Amalgamated Association of Iron and Steel Workers," there had been no uniformity of action nor harmony of interests on the part of those engaged in distinct callings about the mill or furnace. The "puddler" might demand an advance in wages or protest against a reduction, but the "roller" did not abandon his rolls because the puddler had quit the furnace. The carvers' union might strike at a time when the cabinetmakers at work in the same factory were satisfied, or both might strike, and the members of the upholsterers' union would remain at their work. In the case of common laborers there was neither union nor protection; they were left to prey upon each other, and, as sometimes happened, were obliged to compete against skilled mechanics, who when out of work did not scruple to take the place of the common laborer.

For the great majority of females employed as wage earners there

was no protection, but, on the contrary, they were, in many instances, looked upon by their male co employés as interlopers in the field of labor, whose chief business was to reduce wages and force men out of employment. The shop-keeper to whom the idle men looked for credit viewed the strike with disgust, for to him it meant loss of profits, and being outside the pale of the organization on a strike, he had but little opportunity to judge of the merits of the situation, though unfortunately he often had abundant leisure to ruminate over unpaid bills.

It was the design of Uriah S. Stevens and his coadjutors to unite all branches of industry in one grand organization, under one head. On Thanksgiving day, in 1869, he and eight others met in a room in the city of Philadelphia and partly formulated a plan which had for its object the accomplishment of this purpose. If such an organization could be affected, its power could be broken from within only. The better to preserve loyalty and strict allegiance, all members were obligated by a solemn oath or affirmation to secrecy and fidelity to the order.

The form of oath at first proposed was amended so as to permit members to make known the purposes of the order to priests in the confessional, because of the strong antipathy of the Roman Catholic church to oath-bound secret societies. As the amended oath of secrecy did not suit the purpose of the order in pacifying the Catholic clergy, and has since been abolished, it is here inserted as a part of the early history of the order: "I do truly and solemnly swear (or affirm) that I will never reveal by word, act, art, or implication, positive or negative, to any person or persons whatsoever, except my religious confessor at the confessional, the name or object of this order, the name or person of any one a member thereof, its signs, mysteries, arts, privileges or benefits now or hereafter given to or conferred on me, any words spoken, acts done or objects intended, except in a legal and authorized manner or by special permission of the order granted to me. I do truly and solemnly promise strictly to obey all laws, regulations, solemn injunctions and legal summons that may be sent, said or handed to me." This is not a complete text of the oath, but as much of that which follows remains in use to-day under the form of a pledge of honor, it might be considered improper to insert it here. This oath of obligation, together with the fact that portions of the sacred Scriptures were read and expounded by laymen in the assemblies of the order, deterred many from identifying themselves with it. The wage-worker belonging to a church organization opposed to oath-bound secret societies could not, as a rule, be induced to take the obligation, or if prevailed upon to put aside his scruples for the time being, was not slow to withdraw upon the strong and pointed declarations of church officials that membership in the order debarred him from communion with his church. It has been asserted that the order became weak-

ened by substituting the simpler pledge of honor for the solemn oath of secrecy and blind obedience; but, judging the matter in the light of recent events, such assertions have no foundation in fact by which they could be sustained. The oath was too sweeping, and the very concession made to the Roman Catholic, viz: the privilege to inform his confessor in relation to the nature of the order, was well calculated, however contrary to the intention, to arouse a feeling of opposition in the breast of the Protestant member, who had neither confessor nor spiritual director to whom he could unbosom himself. The reading of the Bible, too, might not suit the atheist member, nor was it hardly courteous to the Hebrew. It was essential that the order should be without creed, while representing all creeds and antagonizing none. As at first formed, the very name of the order was kept a profound secret. If a meeting was necessary a few cabalistic marks and numbers chalked on doors, sidewalks, or shop entrances were sufficient to insure a full attendance of members. The wonder and speculation caused by these secret signs in those persons not members of the order gave rise to a feeling of egotism in the minds of some of the members, and this was a powerful factor in the creation of a sentiment that the order was strong and powerful at a time when it was indeed very weak. The order was strong in its secrecy but weak in numbers, which, to say the least, was not the purpose for which it had been formed. The country was not suffering by reason of any lack of secret societies, but it was lacking in that which Stevens proposed to create, viz: a consolidation of the industrial classes in one mighty order. As a matter of fact, the aims and objects of the order were then, as now, too great to be buried under the useless rubbish of secret obligations and cabalistic signs. At that time the Master Workman made use of the following exhortation to the candidate for admission to the order: "We mean no conflict with legitimate enterprise; no antagonism to necessary capital. * * * * We mean to uphold the dignity of labor, to affirm the nobility of all who live in accordance with the ordinance of God—'In the sweat of thy brow shalt thou eat bread.' We mean to create a healthy public opinion on the subject of labor and the justice of its receiving a full, just share of the values or capital it has created. We shall, with all our strength, support laws made to harmonize the interest of labor and capital and also those which tend to lighten the exhaustiveness of toil.

"We shall use every lawful and honorable means to procure and retain employment for one another, coupled with just and fair remuneration; and, should accident or misfortune befall one of our number, render such aid as lies within our power to give, without inquiring his country or his creed; and without approving of general strikes among artisans, yet should it become justly necessary to enjoin an oppressor, we will protect and aid any of our number who thereby may suffer loss,

and as opportunity offers, extend a helping hand to all branches of honorable toil."

The foregoing is an epitome of the intents and purposes of the Knights of Labor at the time of its formation, and it is difficult to understand the motives of those who sought and who for some years succeeded in keeping the same covered by a veil of secrecy. The two factions, the secret and anti-secret, contended against each other for the mastery, which was finally obtained by the anti-secret faction at the annual convention of the order held in Detroit, Michigan, in September, 1881. Article XVII of the constitution adopted at this convention reads as follows:

"Section 1. On and after January 1st, 1882, the name and existence of the Order of Knights of Labor shall be made public, and the aims and objects of the order promulgated among all wage-workers of North America.

Section 2. Any local assembly working in any locality where the members would be liable to be victimized, in case the existence of the order were known, may work secretly until such time as the strength of the membership will permit the local to work openly."

In compliance with the foregoing 1st section of Article XVII of the constitution the following circular was issued:

Preamble and Declaration of Principles of the Knights of Labor of North America.

To the Public:

The alarming development and aggression of aggregated wealth, which, unless checked, will inevitably lead to the pauperization and hopeless degredation of the toiling masses, renders it imperative, if we desire to enjoy the blessings of life, that a check should be placed upon its power and upon unjust accumulation, and a system adopted which will secure to the laborer the fruits of his toil; and as this much desired object can only be accomplished by the thorough unification of those who labor, and the united efforts of those who earn their bread by the sweat of their brow, we have formed the order of the Knights of Labor, with a view of securing the organization and direction, by coöperative effort of the power of the industrial classes; and we submit to the world the objects sought to be accomplished by our organization, calling upon all who believe in securing "the greatest good to the greatest number" to aid and assist us.

I. To bring within the folds of organization every department of productive industry, making knowledge a standpoint for action, and industrial, moral worth, not wealth, the true standard of individual and national greatness.

II. To secure to the toilers a proper share of the wealth that they create; more of the leisure that rightfully belongs to them; more society advantages; more of the benefits, privileges and emoluments of the world; in a word, all those rights and privileges necessary to make them capable of enjoying, appreciating, defending and perpetuating the blessings of good government.

III. To arrive at the true condition of the producing masses in their

educational, moral and financial condition, by demanding from the various governments the establishment of bureaus of labor statistics.

IV. The establishment of coöperative institutions, productive and distributive.

V. The reserving of the public lands—the heritage of the people—for the actual settler. NOT ANOTHER ACRE FOR RAILROADS OR CORPORATIONS.

VI. The abrogation of all laws that do not bear equally upon capital and labor; the removal of unjust technicalties, delays and discriminations in the administration of justice; and the adopting of measures providing for the health and safety of those engaged in mining, manufacturing or building pursuits.

VII. The enactment of laws to compel chartered corporations to pay their employés weekly, in full, for labor performed during the preceding week, in the the lawful money of the country.

VIII. The enactment of laws giving mechanics and laborers a first lien on their work for their full wages.

IX. The abolishment of the contract system on national, State and municipal work.

X. The substitution of arbitration for strikes, whenever and wherever employers and employés are willing to meet on equitable grounds.

XI. The prohibition of the employment of children in workshops, mines and factories, before attaining their fourteenth year.

XII. To abolish the system of letting out by contract the labor of convicts in our prisons and reformatory institutions.

XIII. To secure for both sexes, equal pay for equal work.

XIV. The reductions of the hours of labor to eight per day, so that the laborers may have more time for social enjoyment and intellectual improvement, and be enabled to reap the advantages conferred by the labor-saving machinery which their brains have created.

XV. To prevail upon governments to establish a purely national circulating medium, issued directly to the people, without the intervention of any system of banking corporations, which money shall be a legal tender in payment of all debts, public or private.

If you believe in organization, you are earnestly invited to join with us in securing these objects. All information on the subject of organization should be sent to the grand secretary of the order, who will have an organizer visit you and assist in furthering the good work.

We are now daily in receipt of letters from all points of the compass, asking how they can be organized and brought into the order. From the tenor of a large proportion of the inquiries, the impression has gone abroad that the Knights of Labor is a political organization, to last through a campaign, or something of that sort. If any one joins the order under this impression he is mistaken.

As an order we have a higher mission to serve, than the forming of a mere political party. Any one reading our declaration of principles will see that, while we are seeking reforms that must in some instances come through the ballot box, yet by far the highest motive that concerns us, is the education of the masses to that point where they will fully see and know not only their own wrongs and degradation, but see a full and final solution of the labor problem, and when this is attained, each will see clearly for himself in his own way, the only path that leads to liberty and equality. When this advanced point is once attained, then will the party that is to carry the desired

measures to success be evolved. It will be evolved slowly and imperceptibly almost. But that such will be the final outcome of organization and education, is the silver lining of the cloud that now lowers so threateningly above us. When such a party does come, its name will not be the laboring-man's party, or the bond-holder's party, but the party of the people, for the people and by the people. A party refusing to receive special privileges, or grant them.

A party that will not sit idly by, and do nothing, or worse than nothing, when thousands and hundreds of thousands of honest men are tramping our streets, wanting work, willing to work, and none to be had at any price—without employment at home and a "Tramp Act" threatening them if they dare to seek it at distance.

A party that will not permit a set of politicians to so manipulate the finances of the country that ten thousand four hundred and seventy-eight business men in one year are thrown upon the streets penniless and without homes, at a loss to the country of $234,383,132, involving 693,420 traders, or in other words catching one business man out of every sixty-four.

A party that will declare in tones of thunder just what kind of metal or paper shall constitute the money of this country, and thereby prevent a lot of shylocks and sharpers of all descriptions from declaring that one kind of money is worth $2.60, and another almost worthless, yet all the money of the people.

A party that will demand and establish labor bureaus.

A party that will declare and enforce a law declaring that not another foot of *public lands* shall be GIVEN to railroads and corporations.

A party that will insist upon *exact equality before the laws.*

A party that will be humane enough to believe that pure air should and must be found in our mines and factories, if scientific research can devise ways and means for providing it, and that all buildings where men are employed are well supplied with fire escapes and other means of safety.

A party that will abolish the contract system on all work done for the people, for the use of the public.

A party that believes if we are to have a free country, that it can only exist by reason of the intelligence of its citizens, and if intelligence is to be the base of our continued existence, the child must be educated and fitted for the position he is to occupy in the future. This can only be done by prohibiting children from going into our workshops and mills before attaining their fourteenth year.

A party that will not confine a man in prison because he is unfit to associate with his fellowman, and then tax the community to board and lodge the criminal free, and sell his labor so as to enter into competition with the same labor of the honest law-abiding citizens.

A party that will make it fashionable to be honest, and pay an equal price for equal labor, regardless of color, creed, country or *sex.*

ROBT. D. LAYTON,
Grand Secretary.
T. V. POWDERLY,
Grand Master Workman.

It will be seen that, according to the strict letter of the constitution to "*wage-workers*" alone should be made public the name, existence, &c., &c., of the order; but, as a matter of fact, the whole pub-

lic was made acquainted with the same as fully as were the wage-workers, so called. In the summer of 1882 the Greenback and Labor element of Pennsylvania put in nomination a full State ticket and these circulars were scattered broadcast throughout the State, and in nearly every section of the State organizers were at work forming local assemblies of the order. The distribution of these circulars, together with other methods adopted at that time and since to make public the name and purposes of the order, had a marked effect in adding to its strength both in numbers and in intelligence. When the constitution was first adopted, which took place in Reading, Pennsylvania, in January, 1878, the strength of the order was, in number, less than ten thousand, which was, under all the circumstances, a very poor growth for an organization which had then been in existence for a period of nine years, and that too, at a time when the country was suffering from a very general and severe business depression. The order continued to grow, reaching the highest pinnacle of notoriety and the greatest power in numbers in 1886. During that year it spread like wild-fire, and there was not a city of importance in the Union, nor a good-sized town in the North, that did not contain from a few to several thousand members of the order.

Previous to 1886 there was a prevailing impression among those outside of the order that no one but a wage-worker, technically so called, was eligible to membership, and even to this day there are many persons in as well as out of the order who act in harmony with this erroneous impression. The constitution of the order makes all persons of proper age, of either sex and of good moral character, eligible to membership, except lawyers, bankers, professional gamblers or stock brokers, and those engaged in the manufacture or sale of intoxicating liquors. At one period the rule forbidding the initiation of persons engaged in the liquor traffic did not apply to those who kept roadside inns for the *bona fide* entertainment of man and beast, and even now, though the law of the ballot excludes the manufacturer of beer or ale, it does not exclude his employés. The candidate for membership is judged by his occupation at the time he is balloted for, and not by his previous vocation; but should he, after becoming a member of the order, pursue any of the occupations coming under the ban of the order, he must retire, or, failing to do this, become liable to expulsion.

The order as at present constituted is composed of bodies known as "Assemblies," and these in turn are called "General," "State," "District" and "Local;" the latter being the most important, and the very corner-stone of all, which in title or authority take precedence. The order, like all organizations, must have officers; but a member of a "local" is as high in the order of knighthood, so far as the intents and purposes of the order are concerned as the general master-workman himself; therefore, to understand the "local" thoroughly is to

become acquainted with the very purposes for which the order is maintained, and these are epitomized as follows, in Article XVI of the constitution, section 124:

"The local assembly is not a mere trade union or beneficial society; it is more, and higher. It gathers into one fold all branches of honorable toil, without regard to nationality, sex, creed or color. It is not founded simply to protect one interest or to discharge one duty, be it ever so great. While it retains and fosters all the fraternal characteristics and protection of the single trade union, it also, by the multiplied power of union, protects and assists all. It aims to assist members to better their condition, morally, socially and financially. It is a business firm, every member an equal partner, as much so as a commercial house or a manufacturing establishment. All members are in duty bound to put in their equal share of time and money. The officers elected must not be expected to "run it" and the rest of the partners do nothing, as in the case of mere societies. While acknowledging that it is sometimes necessary to enjoin an oppressor, yet strikes should be avoided whenever possible. Strikes, at best, only afford temporary relief, and members should be educated to depend upon thorough organization, coöperation and political action, and through these the abolishment of the wage system. Our mission cannot be accomplished in a day or generation. Agitation, education and organization are all necessary; thorough organization is essential for successful arbitration, and where arbitration fails strikes seldom succeed. The first duty of members is to perfect organization and discipline. Among the higher duties that should be taught in every local assembly are men's inalienable inheritance and right to a share, for use, of the soil; that the right to life carries with it the right to the means of living; and that all statutes that obstruct or deny these rights are wrong, unjust, and must give way. Every member who has the right to vote is a part of the government of the country and has a duty to perform, and the proper education necessary to intelligently exercise this right, free from corrupting influences, is another of the higher duties of a local assembly. In short, any action that will advance the cause of humanity, lighten the burden of toil, or elevate the moral and social condition of mankind, whether incorporated in the constitution or not, is the proper scope and field of operation of a local assembly."

A "local" must have a name and number, and shall be composed of not less than ten persons, three-fourths of whom must be wage-workers or farmers, and though the membership increase to hundreds this proportion must be maintained for all time. A "local" may be either a "trade local," composed of members engaged in a particular industry, such as coal or iron; or it may be a "mixed local," composed of persons pursuing entirely different occupations, and it is not an uncommon thing to find ministers of the gospel, men formerly lawyers, merchants, clerks, artisans and common laborers, all members of the same local assembly. A "local" has a full complement of officers, and a court before which members charged with violating the constitution or by-laws are tried. It has its signs, grips and pass-words, but these, though secret, are used to protect the assembly from im-

posters, or to better enable a member to seek protection from members of the order, when circumstances place him among strangers. The secrecy of the order to-day is no more than what might be expected in the family circle, a board of railroad directors or a political caucus.

A "district assembly" is composed of a given number of locals, and has a general supervision over them. The officers of the district are elected by the locals, of which the district is composed, and there must be at least five local assemblies to each district assembly. A "State assembly" may be formed by ten or more locals in any State, territory or province. It has a general supervision over the local assemblies in the State or territory, where formed, subject, of course, like the district assemblies, to the general assembly, and the laws of the order. The "general assembly" is the supreme power in the order, and it alone has power to alter, amend or repeal the fundamental or general laws of the order, and finally decide all controversies arising in the order. It has power to tax all members of the order for its maintenance, and to adopt any means for the better protection and general good of the order. It must hold a regular meeting once each year, and may hold a special session when called by the general master workman, or at the request of a certain number of State or district assemblies of a given number of States. Each "State," "district" or "national trade" assembly is entitled to send one representative to the general assembly for the first three thousand members or less, and one for each three thousand members or fractional majority thereof. To meet the demands of trades organizations, national trades assemblies are constituted, the members of which must be composed exclusively of the particular trade or calling applying for the charter. Where the territory embraced is large, it is allowed the national trades assembly to sub-divide according to the necessities of its geographical locations. These sub-divisions are known as "divisions," and each has its particular number. The national trade assembly has certain defined jurisdiction over all its members, but it can make no law or regulation which would conflict with the constitution and laws of the order. Nor can it or any branch thereof, directly or indirectly make or enforce any law which shall prevent a member of the order from working at his trade or calling—and to prevent another abuse of power which it might otherwise commit—it cannot make or enforce any law which shall require membership in a trade or other organization as a prerequisite to membership in the order.

Early in 1885 it was noticed that many members of trades-unions who had joined the Knights of Labor were seeking to make the order subservient to trades-unions. A cigarmaker who happened to be a member of the Knights of Labor, as well as a member of the cigarmakers' union, would not hesitate to throw any possible obstruction in the way of electing a fellow cigarmaker into the Knights of Labor, unless the applicant for admission was a member of the cigarmakers'

union. Printers, members of the typographical union, iron workers, members of the Amalgamated Iron and Steel Association, and other trades-unionists acted upon the same principle, and in some cases cliques of trades-unionists were formed in local assemblies for the purpose of securing the offices and controlling the ballot.

The trades-union spirit, if permitted to grow within the order, would have done one of two things, either it would have made the order subservient to its purpose, or, failing in this, would have destroyed its usefulness. The General Master-Workman, was not slow to observe this threatened danger, and in his address to the general assembly which met at Hamilton, Ontario, in October, 1885, he said:

"I do not favor the establishment of any more national trade districts; they are a step backward in the direction of the old form of trade union; they adopt some of the plans of the latter, and among them I cannot find any good points; we should discourage them in future. I have also observed that the assembly that is composed of men who belong to one calling, devote no time to anything but trade topics. This is in violation of the obligation which is taken by every person who joins the order, and if it continues we will eventually go back to the original starting point, the old time trade-union, adopting all of its useless features and none of the good ones."

The above quoted language of the Grand Master-Workman has had its effect, for, though trades assemblies are being chartered, all applicants for admission to the order must now subscribe to the following pledge:

"*To the Officers and Members of Local Assembly No.* . . . . :

"With a desire to aid the mission of the Knights of Labor in improving the condition of the toiling millions of earth, and without unworthy motives, I hereby propose myself for admission into your order. I promise to faithfully obey your constitution, rules and regulations, and to suffer the penalties fixed therein for disobedience, violation of pledge of honor, or insubordination. *I will maintain the supremacy of the Knights of Labor above that of any other labor organization on earth, and do all in my power to increase its power and influence for right and justice and advance its principles among men.*"

It should not be supposed however that all the trades-unionists, members of the Knights of Labor, are of the class referred to. On the contrary, some of them are the most active spirits in the order, freely giving both time and money to advance its principles and to secure its triumph.

In conclusion it may be said that from the day of its organization to the present, the order has had to contend against bad members from within, and from ignorant or malicious foes from without. Members of the order have been discharged from their employment by men who, while claiming for the employers the right to combine, deny the same right to employés. For example, the Legislature of North Carolina passed the following act, which has been enforced against members of the Knights of Labor:

"*Sec. 1095. Political Societies, Secret, Prohibited, 1870–'71, c. 133. 1868–'9, c. 267. 1871–'2, c. 143.*

"If any person, for the purpose of compassing or furthering any political object, or aiding the success of any political party or organization, or for resisting the laws, shall join or in any way connect or unite himself with any oath-bound secret political or military organization, society or association of whatsoever name or character, or shall form or organize, or combine and agree with any other person to form or organize any such organization, shall use, or agree to use, any certain signs or grips or pass-words, or any disguise of the person or voice, or any disguise whatsoever for the advancement of its object, and shall take or administer any extra-judicial oath, or any secret solemn pledge, or any like secret means, or if any two or more persons for the purpose of compassing or furthering any political object, or aiding the success of any political party or organization, or for circumventing the laws, shall secretly assemble, combine or agree together, and the more effectually to accomplish such purpose, or any of them, shall use any certain signs or grips, or pass-words, or any disguise of the person or voice, or other disguise whatsoever; or shall take or administer any extra-judicial oath or other secret solemn pledge, or if any persons shall band together and assemble to muster, drill or practice any military evolutions, except by virtue of the authority of an officer recognized by law, or of an instructor in institutions or schools in which such evolutions form a part of the course of instruction, or if any person shall knowingly permit any of the acts and things herein forbidden to be had, done or performed on his premises, or on any premises under his control, or if any person being a member of any such secret political or military organization, shall not at once abandon the same and separate himself entirely therefrom, every person so offending shall be guilty of a misdemeanor, and fined not less than ten nor more than two hundred dollars, or be imprisoned, or both, at the discretion of the court.'"

The enemies of the order, notwithstanding that the oath of secrecy had long been abolished, sought in many ways to predjudice the Pope and draw down his censure upon it. Failing to make any headway in the States, they sought Canada as a field of operation, and there succeeded in inducing Cardinal Taschereau, in 1885, to condemn the order everywhere within his jurisdiction. This mandament was published and republished in the States, and it looked at that time as if the enemies of the order would win the Pope to their side. The General Master-Workman sought an interview with Cardinal Gibbons and explained to him in the interview all the secret work together with the aims and objects of the order. Afterwards Cardinals Gibbons and Manning made a plea to Rome which was successful. The christian character of the order was acknowledged and the mandament of Cardinal-Archbishop Taschereau was suspended until further orders, and on the 5th of April, 1887, the Cardinal-Archbishop, in a circular read in all the churches in his diocese, made known the action of the Holy See; but for some reason this circular did not receive the same attention from the press as the former one.

Despite all opposition the order has grown in power and numbers. It has year by year adopted some principle of a political economic nature while retaining most of those principles contended for by the trades-unions. It acts under the motto that, "*That is the most perfect government in which an injury to one is the concern of all*," and with the declaration that "*When bad men combine, the good must associate, else they will fall, one by one, an unpitied sacrifice in a contemptible struggle.*" It presents to the world the following platform of principles:

The alarming development and aggressiveness of great capitalists and corporations, unless checked, will inevitably lead to the pauperization and hopeless degredation of the toiling masses.

It is imperative, if we desire to enjoy the full blessings of life, that a check be placed upon unjust accumulation and the power for evil of aggregated wealth.

This much-desired object can be accomplished only by the united efforts of those who obey the divine injunction: "In the sweat of thy face shalt thou eat bread."

Therefore we have formed the Order of Knights of Labor, for the purpose of organizing and directing the power of the industrial masses, not as a political party, for it is more—in it are crystallized sentiments and measures for the benefit of the whole people, but it should be borne in mind, when exercising the right of suffrage, that most of the objects herein set forth can only be obtained through legislation, and that it is the duty of all to assist in nominating and supporting with their votes only such candidates as will pledge their support to those measures, regardless of party. But no one shall, however, be compelled to vote with the majority, and calling upon all who believe in securing "the greatest good to the greatest number," to join and assist us, we declare to the world that our aims are:

I. To make industrial and moral worth, not wealth, the true standard of individual and national greatness.

II. To secure to the workers the full enjoyment of the wealth they create, sufficient leisure in which to develop their intellectual, moral and social faculties; all of the benefits, recreation and pleasures of association; in a word, to enable them to share in the gains and honors of advancing civilization.

In order to secure these results, we demand at the hands of the State:

III. The establishment of bureaus of labor statistics, that we may arrive at a correct knowledge of the educational, moral and financial condition of the laboring masses.

IV. That the public lands, the heritage of the people, be reserved for actual settlers: not another acre for railroads or speculators, and that all lands now held for speculative purposes be taxed to their full value.

V. The abrogation of all laws that do not bear equally upon capital and labor, and the removal of unjust technicalities, delays and discriminations in the administration of justice.

VI. The adoption of measures providing for the health and safety of those engaged in manufacturing and mining, building industries, and for the indemnification of those engaged therein for injuries received through lack of necessary safeguards.

VII. The recognition, by incorporation, of trades unions, orders and such other associations as may be organized by the working masses to improve their condition and protect their rights.

VIII. The enactment of laws to compel corporations to pay their employés weekly, in lawful money, for the labor of the preceding week, and giving mechanics and laborers a first lien upon the product of their labor to the extent of their full wages.

IX. The abolition of the contract system on National, State and municipal works.

X. The enactment of laws providing for arbitration between employers and employed, and to enforce the decision of the arbitrators.

XI. The prohibition by law of the employment of children under fifteen years of age in workshops, mines and factories.

XII. To prohibit the hiring out of convict labor.

XIII. That a graduated income tax be levied.

And we demand at the hands of Congress:

XIV. The establishment of a National monetary system in which a circulating medium in necessary quality shall issue direct to the people, without the intervention of banks; that all the National issue shall be full legal tender in payment of all debts, public and private; and that the government shall not guarantee or recognize any private banks, or create any banking corporations.

XV. That interest-bearing bonds, bills of credit or notes shall never be issued by the government, but that, when the need arises, the emergency shall be met by issue of legal tender non-interest bearing money.

XVI. That the importation of foreign labor under contract be prohibited.

XVII. That, in connection with the post office, the government shall organize financial exchanges, safe deposits and facilities for the deposit of the savings of the people in small sums.

XVIII. That the government shall obtain possession, by purchase, under the right of eminent domain, of all telegraphs, telephones and railroads, and hereafter no charter or license be issued to any corporation for construction or operation of any means of transporting intelligence, passengers or freight.

And while making the foregoing demands upon the State and National Government, we will endeavor to associate our own labors.

XIX. To establish coöperative institutions, such as will tend to supersede the wage system, by the introduction of a coöperative industrial wage system.

XX. To secure for both sexes equal pay for equal work.

XXI. To shorten the hours of labor by a general refusal to work for more than eight hours.

XXII. To persuade employers to agree to arbitrate all differences which may arise between them and other employés, in order that the bonds of sympathy between them may be strengthened, and the strikes may be rendered unnecessary.

It does not require more than a mere perusal of the foregoing declaration of principles, to satisfy an impartial mind that the order is not a "striking and boycotting machine." Its political character is unmistakable, not of course in a party sense, but as an educator instructing its members in their rights and duties as citizens. The present

system of "Bureaus of Industrial Statistics" or, as commonly called, "Labor Bureaus" which have been recently organized are, to a considerable degree, the result of efforts made by members of the order, and the disposition lately manifested by Congress to reserve the public domain for the use of actual settlers, and also holding corporations to a strict accountability for the proper use of their land grants, is evidence that the work of the order has not been in vain. The views of the order on questions of political economy may be right or wrong, and this, time alone will develop. Apart, however, from strikes, and politics the order has been endeavoring in a quiet way to build up coöperative companies as well as insurance companies, where the members could for a certain sum be insured against disability or death. Coöperation has been a failure notwithstanding the many assertions of its feasibility and practicability. Here and there a few individual members of the order have banded together for the manufacture of commodities, and who by using the order have been enabled to build up a trade, but the general result has not been such as would entice business men to put money capital at the disposal of coöperative associations.

Wage-workers as a rule, are not ripe for coöperation. There is a feeling of jealousy, envy and distrust among the ranks to such an extent, that under the present circumstances, the man or set of men who would embark in a coöperative enterprise would in all probability be marked by internal dissensions and outside indifference. The insurance plan has been a practical failure. The reasons are manifold and obvious; among the reasons may be stated first, that the men at the head of this scheme had little or no practical experience in this particular line of business. Second, that the rates are too high when compared with these offered by insurance companies outside of the order. Third, that the members as a rule are members of various orders which have an insurance fund, and being for the most part obliged to economize, do not take kindly to any scheme or device of this character, especially where in this instance it is not made compulsory. The country is full of mutual beneficial societies chartered for the express purpose of insuring wage-workers and others who are too poor to pay the high rates demanded by regularly organized and chartered insurance companies. There is no doubt but that the insurance plan if made compulsory upon each member of the order would act as a unifying power and apart from its pecuniary, post mortem benefit would materially strengthen it. So far, however, the result has not been encouraging and there is no foundation in fact, for the supposition that it will be better in the future unless insurance shall be made a part of Knighthood. The only intelligible and complete report made to the order was that of Homer L. McGaw, the general insurance secretary in 1885. At that time out of a total membership in the order in good standing, viz: 104,335, less than five

thousand had taken advantage of the insurance scheme, and these represented but 564 local assemblies in a total of more than 1,000. Pennsylvania, the hot-bed of the order, had but 218 members while Illinois, a comparatively small field, had 358 members. Without going into full details, it may be stated that there is at present and has been in the past a general apathy in the order on the question of insurance which, nothing but compulsory measures and the placing of that particular line of business under the management of competent persons will ever eradicate. The order is now in its most critical condition, and the symbolic triangle to be broken only from within, is being pressed to its utmost by two conflicting bodies who are endeavoring with all the power at their command to place self above the good of the order. The result is in the future; this article has to deal with the past and present only.

THE CONDITION OF WAGE-EARNERS.

This part of our Report is divided into two sections: the first containing statistics relating to the income and modes of expenditure of workingmen; and the second section their opinions concerning labor organizations and other matters most intimately pertaining to their employment.

At the outset a word may be said concerning the propriety of this inquiry. Occasionally, a workingman has regarded it with disfavor, as going too far into his private affairs. Several things may be said in the way of defense. First, no one is required to make returns; his conduct in making, or declining to make them, is purely voluntary. Second, the object of making the inquiry is to benefit the class who make returns, as we shall soon show. If the question be asked, why are not such returns sought from all classes, the answer is that the use made by those who possess ample means of what they have is of less consequence, with reference to the work of this Bureau, than the use by the working class of their income. The inquiry is for the chief benefit of the wage-earners, and the omission of other classes, therefore, should not give rise to unfavorable remark. Last, many of the Bureaus in other States have been conducting the same inquiry for several years, and if unfavorable opinions at first existed with respect to the inquiry, they have disappeared.

The returns are scanty, but under the most favorable conditions for getting them, completeness could not be reasonably expected. Only a few workingmen keep an accurate account of their earnings and expenditures. It is true that if the Bureau had an adequate force to make personal inquiry, a much larger body of statistics on the subject could have been gathered. Many who kept no accounts could have been able to make quite complete returns by going to their grocer, butcher, milkman, drygoods, or coal dealer, and obtaining from them copies of their accounts. If the Bureau could have aided workingmen in preparing their statements from these sources, doubtless far more information could have been obtained.

Concerning the utility of this information much may be said. In the first place, if the Bureau should hereafter seek to present such information, and the working class in order to furnish it, should keep fuller accounts of their expenditures than they have done, this prac-

tice would be worth learning. The getting into the way of keeping an account, in other words, the forming of the habit, would be an excellent thing. Some knowledge, too, would be gained about figures, especially by those who had not been educated in American schools. But these are among the slightest advantages. If such an account was carefully kept, in times when smaller wages were paid, or less work was done, and the workman's income consequently was less, he could decide more intelligently how to reduce his expenditures. If these were arranged under a few convenient heads, like those given in the following tables, or in other ways best suited to his purpose, he could easily tell what to do at a time when his income was shrinking.

Another consequence, hardly less important, from keeping and studying such an account, would probably be the purchase and use of more economical food and clothing. To all classes alike, with few exceptions, does the remark apply that they have but little knowledge of the most nutritious and economical foods. They know what they like—one prefers beefsteak, another fried oysters, and a third pie and cake, and if the means are sufficient each seeks to gratify his desire. But a very large class would buy more wisely if they were better instructed on the subject. Therefore, in studying one's expenditures and in getting a clearer idea of them, the quantities bought and the prices paid, the first step is laid for the inquiry, how much more can be obtained for the same amount of money. In other words, a regular study of one's expenses is likely to lead to the inquiry above mentioned. There is a far more hopeful prospect of advance for the workingman along the line of intelligent purchasing and living, than in the direction of higher wages.

Another result of thus keeping and studying accounts by workingmen in many cases doubtless would be the formation of the desire to save a portion of their earnings. That they often squander much is an obvious fact. So do other classes. Probably workingmen are no worse in spending their income in uneconomical ways than others. That all should save who can, in order to provide for sickness, accident, old age, the family, and for other needs, is a truism which requires no consideration.

Returning to the presentation of these returns, we shall answer the final objection that if they were extensively collected and published, the employers of labor would take advantage of this knowledge to drive down the rate of wages whenever it was learned that the workingman had a margin of gain left. This objection has not the smallest foundation. Nothing is truer in the world's experience than this, "whoever hath to him shall be given," and the employé who is laying up money by buying wisely, by practicing rational abstinence, is sure to receive general commendation, and an employer who should reduce wages because, forsooth, he had learned that his employés could live on smaller, would be visited with the scorn and disapproval of man-

kind. The opposite mode of living furnishes a better excuse for reducing wages—the unwise or wasteful use of them. Again and again is it said that if wages were lowered the workingman would fare no worse, because they do not make a fit use of the income they have. Of course, this is a legally free country, and every one can spend his earnings as he pleases, but there are social and moral considerations that govern expenditures which, if broken, are followed by judgments of various kinds, not the least severe of which is the unfavorable judgment of society. The workingman who so conducts himself as to receive the favorable judgment of the community in which he lives, who saves his earnings whenever this is practicable, who buys a home and seeks to play the part of a good citizen, greatly improves his chance of having his wages sustained or advanced, for an employer would hesitate much longer before reducing the wages of such a workman and citizen, than he would the wages of one having less thought for himself, for his family and for the community. This hesitation would be the greater, well knowing that the judgment of the community in which he lives, and with which there would be far more pleasure in living in accord than in opposition, would be opposed to him. The obvious deduction, therefore, is, if the workingman desires to retain or advance his wages, a wise economy is of the highest importance, is one of the strongest guarantees against their unfavorable disturbance, and by giving that record he is strengthening his position both with his employer and with the community.

With respect to publishing the remarks and opinions of workingmen, several reasons may be given. A few years ago, when a committee of Congress investigated the causes of the business depression then existing, men belonging to all classes were invited to express their opinions or to state facts bearing on the inquiry. This was deemed a fit mode of proceeding, inasmuch as intelligence is no longer confined to narrow circles of society. The matters considered in this Report relate to the welfare of the working class, and it is quite proper, therefore, that space should be given to them for a hearing on these matters. Their views are very varied, and are produced with accuracy. In our judgment, some of them are quite as wise as many of the more pretentious oracles of our time.

KIND OF WORKMAN.	2. PLACE OF BIRTH.	3. RESIDENCE.	4. OCCUPATION.	5. WHERE EMPLOYED.
No. 1, textile worker, F,	Philadelphia,	Philadelphia,	Spooler,	Philadelphia,
No. 2, brass worker,	England,	Philadelphia,	Brass finisher,	Philadelphia,
No. 3, iron worker,	Philadelphia,	Philadelphia,	Machinist,	Philadelphia,
No. 4, textile worker, F,	Philadelphia,	Philadelphia,	Cloth mender,	Philadelphia,
No. 5, miner,	Columbia Co., Pa.,	Cambria Co ,	Coal miner,	Cambria Co.,
No. 6, textile worker,	England,	Philadelphia,	Weaver,	Philadelphia,
No. 7, iron worker,	Chester Co., Pa.,	Philadelphia,	Machinist,	Philadelphia,
No. 8, iron worker,	Philadelphia,	Philadelphia,	Machinist,	Philadelphia,
No. 9, textile worker,	England,	Philadelphia,	Weaver,	Philadelphia,
No. 10, textile worker, F,	Philadelphia,	Philadelphia,	Cloth mender,	Philadelphia,
No. 11 miner,	England,	Coalport,	Coal miner,	Coalport,
No. 12, textile worker,	Pennsylvania,	Manayunk, Pa.,	Cotton spinner,	Manayunk,
No 13, engineer,	Ireland,	Philadelphia,	Stationary engin'r,	Philadelphia,
No. 14, textile worker,	Pennsylvania,	Philadelphia,	Cloth examiner,	Philadelphia,
No. 15, clerk.	Boston, Mass.,	Philadelphia,	Shipping clerk,	Philadelphia,
No. 16, textile worker,	England,	Philadelphia,	Cloth examiner,	Philadelphia,
No. 17, moulder,	Philadelphia,	Philadelphia,	Stove moulder,	Philadelphia,
No. 18, iron worker,	Ireland,	Phœnixville,	Machinist,	Phœnixville,
No. 19, engineer,	Pennsylvania,	Steelton, Pa.,	Stationary engin'r,	Steelton,
No. 20, iron worker,	Pennsylvania,	Philadelphia,	Machinist,	Manayunk,
No. 21, textile worker, F,	England,	Philadelphia,	Weaver,	Philadelphia,
No. 22, glassmaker,	Pennsylvania,	Philadelphia,	Glassblower,	Philadelphia,
No. 23, textile worker, F,	Pennsylvania,	Philadelphia,	Burler,	Philadelphia,
No. 24, textile worker, F,	Pennsylvania,	Philadelphia,	Burler,	Philadelphia,
No. 25, hatter,	Germany,	Philadelphia,	Hatter,	Philadelphia,
No. 26, hatter,	Ireland,	Philadelphia,	Hat finisher,	Philadelphia,
No. 27, hatter,	Sweden,	Philadelphia,	Hatter,	Philadelphia,
No. 28, wood worker,	Pennsylvania,	Philadelphia,	Carpenter,	Philadelphia,
No. 29, iron worker,	Pennsylvania,	Philadelphia,	Machinist,	Philadelphia,
No. 30, textile worker,	Pennsylvania,	Philadelphia,	Warper,	Philadelphia,
No. 31, steel worker,	England,	Philadelphia,	Steel melter,	Philadelphia,
No. 32, lead worker	Pennsylvania,	Philadelphia,	Cardmaker,	Philadelphia,
No. 33, steel worker.	New York,	Philadelphia,	File cutter,	Philadelphia,
No. 34, steel worker,	Virginia,	Philadelphia,	Saw maker,	Philadelphia,
No. 35, steel worker,	Pennsylvania,	Philadelphia,	File cutter,	Philadelphia,
No. 36, steel worker,	Pennsylvania,	Philadelphia,	Saw maker,	Philadelphia,
No. 37, wood worker,	Germany,	Philadelphia,	Pattern maker,	Philadelphia,
No. 38, textile worker,	Pennsylvania,	Philadelphia,	Beamer,	Philadelphia,
No. 39, textile worker,	England,	Philadelphia,	Loom fixer,	Philadelphia,
No. 40, textile worker,	Pennsylvania,	Philadelphia,	Spinner,	Philadelphia,
No. 41, textile worker,	England,	Philadelphia,	Foreman, dyer,	Philadelphia,
No. 42, cardmaker,	Pennsylvania,	Philadelphia,	Cardmaker,	Philadelphia,
No. 43, cardmaker,	England,	Philadelphia,	Card finisher,	Philadelphia,
No. 44, textile worker,	Belgium,	Philadelphia,	Power loom weav'r,	Philadelphia,
No. 45, textile worker,	Pennsylvania,	Philadelphia,	Warp drawer,	Philadelphia,
No. 46, shoe cutter,	Pennsylvania,	Philadelphia,	Shoe cutter,	Philadelphia,
No. 47, engineer,	Pennsylvania,	Philadelphia,	Stationary engin'r,	Philadelphia,
No. 48, engineer,	Ireland,	Philadelphia,	Stationary engin'r,	Philadelphia,
No 49, textile worker,	Pennsylvania,	Clifton Heights, Pa,	Loom fixer,	Philadelphia,
No. 50, metal worker,	Pennsylvania,	Johnstown,	Wire drawer,	Johnstown,
No. 51, metal worker,	England,	Johnstown.	Wire drawer,	Johnstown,
No. 52, miner,	New York,	Cambria City,	Coal miner,	Cambria City,
No. 53, miner,	England,	Coalport,	Coal miner,	Coalport,
No. 54, laborer,	Pennsylvania,	Johnstown,	Laborer,	Johnstown,
No. 55, miner,	Pennsylvania,	Morellville,	Coal miner,	Johnstown,
No. 56, metal worker,	New Jersey,	Johnstown,	Machinist,	Johnstown,
No. 57, building trade,	New Jersey,	Johnstown,	Plumber,	Johnstown,
No. 58, metal worker,	New York,	Johnstown,	Moulder,	Johnstown,
No. 59, clerk,	Pennsylvania,	Johnstown,	Clerk,	Connellsville,
No. 60, metal worker,	Maryland,	Johnstown,	Wire drawer,	Johnstown,
No. 61, metal worker,	Philadelphia,	Johnstown,	Wire drawer,	Johnstown,
No. 62, teamster,	New York,	Johnstown,	Teamster,	Johnstown,
No. 63, repairman,	Ohio,	Johnstown,	Repairman,	Johnstown,
No. 64, metal worker,	New York,	Johnstown,	Puddler,	Johnstown,
No. 65, textile worker,	Austria,	Johnstown,	Picker tender,	Johnstown,
No. 66, textile worker,	Pennsylvania,	Johnstown,	Carder,	Johnstown,
No. 67, textile worker,	Pennsylvania,	Johnstown,	Second hand,	Johnstown,
No. 68, laborer,	Pennsylvania,	Centreville,	Laborer,	Johnstown,
No. 69, welghmaster.	South Carolina,	Johnstown,	Weighmaster,	Johnstown,
No. 70, textile worker,	Pennsylvania,	Johnstown,	Wool sorter,	Johnstown,
No. 71, gas tender,	Pennsylvania,	Johnstown,	Gas tender,	Johnstown,
No. 72, gas tender,	Maryland,	Johnstown,	Gas tender,	Johnstown,
No. 73, laborer,	New York,	Johnstown,	Laborer,	Johnstown,
No. 74, miner,	England,	Johnstown,	Coal miner,	Johnstown,
No. 75, miner,	Wales,	Johnstown,	Coal miner,	Johnstown,

RETURNS.

6. How many hours are a full day's work?	7. Your wages for a full day's work;	Or a full week's work;	Or a full month's work?	8. Number of days unemployed during the year, exclusive of legal holidays.	How many of them were from sickness?	How many from strikes?
10	$1 00	$6 00	$26 00	5		
10	2 00	12 00	52 00	5	None,	None,
	3 20	19 20	83 20	None,	None,	None,
10	1 37			12	7	None,
Work by ton,	1 50	10 50	39 00	None,	None,	None,
10						
10	4 00	24 00	96 00	24	18	None,
10	2 50	15 00	65 00	8	2	None,
10	1 54	9 24	40 04	96	42	None,
10	1 50	9 00	39 00	15	15	None,
10	Piece worker,			140	None,	None,
10	2 00	12 00	52 00	Can't answer,	None,	None,
10		16 00		None,	None,	None,
10		13 20		4½	None,	None,
10¼	2 18	13 08	52 32	None.	None,	None,
10	2 00			27	3	None,
8 and 10		14 00		90	None,	None,
10	3 75			8	4	None,
12	1 74	12 18	52 20	10	None,	None,
10	2 50	15 00	65 00	6	3	None,
10	$1 50 and 2 00			18	14	None,
10		22 40		48	None,	None,
10	1 28	7 50	30 00	28	28	None,
10	1 28	7 50	30 00	7	7	None,
10	5 00	30 00	130 00	14	14	None,
9	3 17	19 00		8	2	None,
10	3 00	18 00	108 00	8	8	None,
10	2 50	15 00	65 00			
10	Average 3 00	As high as 32 00	As high as 94 00	None,	None,	None,
10		14 50		18	12	None,
12	6 50	39 00		60		60
10	2 50	15 00	60 00	6		
9½	2 50					
10	2 50	15 00		8		
9½	2 00	11 00	44 00	12	3	
10	3 50			20	4	
10	3 17	19 00		4	4	
10	2 33⅓	14 00		20	1	
10	2 26⅔	16 00				
10	2 00	12 00	48 00	60	12	
10	3 33⅓	20 00	86 66	12		
10	1 83⅓	10 00				
10	1 70			11	4	
10	1 83⅓	10 00		66	6	
10	2 39			11	2	
8½	Piece work,			50		35
12	3 00			None,		
10	2 75	16 50	71 50	2		
10		16 00		12		
10	2 70			None,		
11	2 00			10	2	
10	2 00			16	8	
10	2 00	12 00	50 00	1	1	
10	1 30			20	10	
10	1 60			50	20	
10	2 50			20		
12	3 50			20		
12	1 50	9 00		6	6	
10			45 00	104		
10	2 00			12	12	
10	2 50			56		
10	1 40			25		
10	2 00					
10	4 00			100		
10	1 23			6	3	
10	2 00			13	1	
10	1 50			4		
10	1 30			3		
10	1 90			36	36	
10	2 00			25		
12	1 50			12	12	
12	1 60	11 20	48 00			
8	1 60			12	4	
8	1 60	9 60		33	33	
10	2 00	12 00		13		

KIND OF WORKMAN.	2. PLACE OF BIRTH.	3. RESIDENCE.	4. OCCUPATION.	5. WHERE EMPLOYED.
No. 76, miner,	Wales,	Johnstown,	Coal miner,	Johnstown,
No. 77, metal worker,	Pennsylvania,	Johnstown,	Furnace man,	Johnstown,
No. 78, metal worker,	Pennsylvania,	Johnstown,	Furnace man,	Johnstown,
No. 79, laborer,	Wales,	Johnstown,	Water tender,	Johnstown,
No. 80, laborer,	South Carolina,	Johnstown,	Water tender,	Johnstown,
No. 81, laborer,	England,	Conemaugh,	Laborer,	Conemaugh,
No. 82, gas tender,	Virginia,	Morrellsville,	Gas tender,	Johnstown,
No. 83, wood worker,	Ohio,	Johnstown,	Carpenter,	Johnstown,
No. 84, miner,	Pennsylvania,	Johnstown,	Coal miner,	Johnstown,
No. 85, miner,	Scotland,	Coalport,	Coal miner,	Irvonia,
No. 86, wood worker,	Pennsylvania,	Conemaugh,	Carpenter,	Johnstown,
No. 87, laborer,	Illinois,	Johnstown,	Furnace keeper,	Johnstown,
No. 88, laborer,	Pennsylvania,	Johnstown,	Furnace keeper,	Johnstown.
No. 89 metal worker,	Pennsylvania,	Johnstown,	Wire worker,	Johnstown,
No. 90, laborer,	Ireland,	Cambria City,	Furnace man,	Johnstown,
No. 91, clay worker,	Pennsylvania,	Lockport,	Brickmaker,	Lockport,
No. 92, clay worker,	Pennsylvania,	Lockport,	Brickmaker,	Lockport,
No. 93, miner,	England,	Greensburg,	Assistant mine boss.	Greensburg,
No. 94, metal worker,	Pennsylvania,	Johnstown,	Machinist,	Johnstown,
No. 95, textile worker,	Pennsylvania,	Johnstown,	Overseer, spinning-room.	Johnstown,
No. 96, clay worker,	England,	Lockport,	Brickmaker,	Lockport,
No. 97, engineer,	Pennsylvania,	Greensburg,	Statlonary engin'r,	Greensburg,
No. 98, coal mine w'ker,	Pennsylvania,	Greenshurg,	Tipple man,	Greensburg,
No. 99, coal mine w'ker,	Pennsylvania,	Unity township,	Laborer,	Greensburg,
No. 100, coal mine w'ker,	Pennsylvania,	Greensburg,	Laborer,	Greensburg,
No. 101, coal mine w'ker,	Pennsylvania,	Greensburg,	Laborer,	Greensburg,
No. 102, wood worker,	Germany,	Greensburg,	Pit carpenter,	Greensburg,
No. 103, miner,	Pennsylvania,	Greensburg,	Coal miner,	Greensburg,
No. 104, miner,	Pennsylvania,	Greensburg,	Coal miner,	Greensburg,
No. 105, miner,	Pennsylvania,	Greensburg,	Coal miner,	Greensburg,
No. 106, miner,	Irelaud,	Greensburg,	Coal miner,	Greensburg,
No. 107, fireman,	Pennsylvania,	Greensburg,	Mine fireman,	Greensburg,
No. 108, clay worker,	Pennsylvania,	Lockport,	Brickmaker,	Lockport,
No. 109, miner,	Pennsylvania,	Greensburg,	Coal miner,	Greensburg,
No. 110, metal worker,	Pennsylvania,	Greensburg,	Blacksmith,	Greensburg,
No. 111, miner,	Pennsylvania,	Greensburg,	Coal miner,	Greensburg,
No 112, miner,	England,	Greensburg,	Coal miner,	Greensburg,
No. 113, miner,	Pennsylvania,	Greensburg,	Coal miner,	Greensburg,
No. 114, miuer,	Pennsylvania,	Greensburg,	Mine boss,	Greeusburg,
No. 115, miner,	Pennsylvania,	Greensburg,	Coal miner,	Greensburg,
No. 116 miner,	Pennsylvania,	Greensburg,	Coal miner,	Greensburg,
No. 117, miner,	Pennsylvania,	Greensburg,	Coal miner,	Greensburg,
No. 118, miner,	Pennsylvania,	Greensburg,	Coal miner,	Greeusburg,
No. 119, miner,	Pennsylvania,	Greensburg,	Coal miner,	Greenshurg,
No. 120, metal worker,	Pennsylvania,	Greensburg,	Blacksmith,	Greensburg,
No. 121, textile worker,	Pennsylvania,	Philadelphia,	Cloth examiner,	Philadelphia,
No. 122, teamster,	Pennsylvania,	Johnstown,	Teamster,	Johnstown,
No. 123, textile worker,	England,	Philadelphia,	Spinner,	Philadelphia,
No. 124, metal worker,	Ohio,	Johnstown,	Machinist,	Johnstown,
No. 125, building trade,	Pennsylvania,	Johnstowu,	Plumber,	Johnstown,
No. 126 miner,	Scotland,	Coalport,	Coal miner,	Coalport,
No. 127, miner,	Pennsylvania,	Coalport,	Coal miner,	Coalport,
No. 128, miner,	England,	Coalport,	Coal miner,	Coalport,
No. 129, metal worker,	Pennsylvania,	Johnstown,	Machinist,	Johnstown,
No. 130, miner,	England,	Coalport,	Coal miner,	Coalport,
No. 131, metal worker,	Massachusetts,	Johnstown,	Iron roller,	Johnstown,
No. 132, miner,	England,	Coalport,	Coal miner,	Johnstown,
No. 133, textile worker,	Pennsylvania,	Philadelphia,	Carder,	Philadelphia,
No. 134, miner,	Scotland,	Coalport,	Coal miner,	Coalport,

RETURNS—Continued.

6. How many hours are a full day's work?	7. Your wages for a full day's work;	Or a full week's work;	Or a full month's work?	8. Number of days unemployed during the year, exclusive of legal holidays.	How many of them were from sickness?	How many from strikes?
10	$1 50			13		
10	1 90			12		
12	2 00	$14 00	$60 00	15	6	
10	1 50					
10	1 50			10	5	
12	1 50			30		
12	1 50			60	60	
10	2 00			10		
10	2 00			12		
10	2 00	12 00	52 00	40	20	
10	2 00		63 00	7		
12				4	4	
12	2 10	14 70	63 00	5	5	
12	2 10					
12	2 10					
9	1 75			40	17	
9	1 75			32	20	
10			62 50			
10	1 70	11 90		5	3	
10	3 00			5		
10	1 80			32	15	
10			70 00	None,		
10	1 85			None,		
10	1 85			None,		
10	1 75			None,		
10	1 85			None,		
10	2 10			None,		
	Work by ton,		76 50			
	Work by ton,					
	Work by ton,					
	Work by ton,					
12	2 10					
10	1 65			12		
9			65 00			
10	2 10					
Work by ton,						
9			114 00			
9						
10			54 00			
9			60 00			
9			69 00			
9			87 00			
9			65 00			
9			60 00	30	30	
10	2 10					
10		7 00		30	2	
12	1 00			14		
10	2 00	12 00		50		
10	4 00	24 00	104 00	5		
10	3 00	18 00		50	17	
10			50 00			
10	1 60			18		6
10	Work by ton,			100		30
10	2 50			6		
10	2 00			32	12	20
10	3 00	18 00		18	18	
10	2 00					
10	1 83	11 00		5		
				60		

KIND OF WORKMAN.	How many from inability to get work?	How many from other causes?	9. Your total wages from November 1, 1886, to November 1, 1887?	10. Your total wages for any period of three months or longer during 1887?	11. Total number in your family, including yourself?
No. 1, textile worker, F,					8
No. 2, brass worker,	None,	None,	Can't say.	$250 00	3
No. 3, iron worker,	None,	None,	About $1,100 00	334 36	5
No. 4, textile worker, F,	None,	7	350 00		6
No. 5, miner,	None,	None,	468 00	117 00	15
No. 6, textile worker,	Three weeks,		450 00		8
No. 7, iron worker,	None,	6	936 00	234 00	2
No. 8, iron worker,	None,	4	747 50		4
No. 9, textile worker,	54	None,	491 00	127 00	4
No. 10, textile worker, F,	None,	None,	360 00	117 00	6
No. 11, miner,	140	None,	443 00	Greatest 180 00	6
No. 12, textile worker,	Can't answer,	Can't answer,	Can't answer,	141 00	6
No. 13, engineer,	None,	None,			13
No. 14, textile worker,	None,	None,	593 00	158 00	7
No. 15, clerk,	None,	10	673 00	156 00	2
No. 16, textile worker,	None,	24	559 00		4
No. 17, moulder,	90	None,	728 00	270 00	4
No. 18, iron worker,	None.	4	About 1,000 00		6
No. 19, engineer,	None,	10	617 70	158 34	6
No. 20, iron worker,	None,	3	720 00	180 00	1
No. 21, textile worker, F,		4	About 400 00		3
No. 22, glassmaker,	None,	None,	About 800 00	250 00	5
No. 23, textile worker, F,	None,	None,	336 00	87 00	3
No. 24, textile worker, F,	None,	None,	364 00	99 00	3
No. 25, hatter,	None,	None,	1 500 00		5
No. 26, hatter,	None,	Pleasure 6 days,	958 00	247 00	4
No. 27, hatter,		None,	921 00		3
No. 28, wood worker,					
No. 29, iron worker,	None,	None,	Can't tell,	216 00	3
No. 30, textile worker,	None,	None,	About 800 00		4
No. 31, steel worker,			1,200 00	449 00	8
No. 32, lead worker,			980 00	195 00	5
No. 33, steel worker,					
No. 34 steel worker,		Shop closed,	870 00	227 75	3
No. 35, steel worker,		Break down of machinery, 9.	500 00	177 00	Single,
No. 36, steel worker,					4
No. 37, wood worker,			969 00	247 00	6
No. 38, textile worker,	2	17	650 00	160 00	4
No. 39, textile worker,			778 00		3
No. 40, textile worker,	48		350 00	135 00	7
No. 41 textile worker,			1,000 00	260 00	4
No. 42, cardmaker,			534 00	120 00	4
No. 43, cardmaker,		7	626 61	173 05	7
No. 44, textile worker,	60		537 00		4
No. 45, textile worker,	9		729 00	170 00	5
No. 46, shoe cutter,		15	922 21		4
No. 47, engineer,			950 00	225 00	5
No. 48, engineer,		2	866 25	219 54	7
No. 49, textile worker,			800 00	221 33	3
No. 50, metal worker,			820 00	205 00	4
No. 51, metal worker,		8	590 00		3
No. 52, miner,		8	600 00	200 00	3
No. 53, miner,					7
No. 54, laborer,		10	390 00	130 00	
No. 55 miner,		30	400 00	100 00	2
No. 56, metal worker,		20			
No. 57, building trade,		20	1,000 00		3
No. 58, metal worker,			450 00	112 50	7
No. 59, clerk,	52	52	293 00	135 00	3
No. 60, metal worker,			615 00	160 00	Single,
No. 61, metal worker,	45	11	625 00	227 00	8
No. 62, teamster,		25	400 00	175 00	5
No. 63 repairman,			612 00	153 00	5
No. 64, metal worker,		100	800 00	200 00	4
No. 65, textile worker,		3			9
No. 66, textile worker,		12	600 00	180 00	3
No. 67, textile worker,		4	462 00	118 00	4
No. 68, laborer,		3			6
No. 69, weigh-master,				135 00	6
No. 70, textile worker,		25	572 00	156 00	3
No. 71, gas tender,			460 00	150 00	Single,
No. 72, gas tender,			587 65	148 20	5
No. 73, laborer,		8	462 00	138 00	4
No. 74, miner,		33	448 00	175 00	3

RETURNS—Continued.

How many are under 12 years?	Ages of those over 12?	12. Number engaged in earning wages?	13. Earnings of all others in your family, besides yourself, during the past year.	14. What was the total cost of living for yourself and family during the year?	How much did you pay for rent?
2	6	5			
None,	One boy 17	None,	None,	$696 60	Rent, car fare, $234 60
3	None,	My elf,	None,	907 80	216 00
1	49, 46, 30, 26, 23	4	Do not know,	Do not know,	192 00
8	14, 15, 17, 18, 15	2	About 300 00	Do not know,	Own the house.
5	3	1	100 00	561 00	84 00
None,		1	None,		216 00
2	2	1	None,	700 88	144 00
2	2	1	None,	414 40	120 00
2		4	1 356 00	1,315 00	195 00
2	19, 21, 40, 41	1	25 00	518 00	50 00
2	18, 20, 22, 24	2	Cannot answer,		
4	From 13 to 21	6	From $4 to $12 per week.	Do not know,	172 00
5		1	Nothing,		132 00
None,	2	None,	None,	300 00	Board,
2	2	None,	None,	559 60	96 00
2	2	1	None,	364 00	156 00
4		1	None,	600 00	100 00
4		1	10 00	575 70	84 00
None,		1	Have no family,	300 00	Am a boarder,
1		Husband, $2 50 per day.	Do not know,	Board for 3 of us $10 per week.	
1	14 and 18	3	400 00	About 600 00	144 00
1		2	143 00	Do not know,	72 00
1	27 and 35	2	720 00	Cannot tell,	150 00
1	14, 17, 20	2			264 00
None,	23 and 14	None,	None,	700 00	216 00
		None,	None,		180 00
		Single,			
None,	Girl 18	1	Cannot tell,	Cannot tell,	Own my house,
2	25 and 26	None,	None,		156 00
2	2	3	600 00	1,800 00	Own house,
3		1		780 00	230 00
2		1			82 00
1		1			132 00
	One, 24 years,	2	Sister, 360 00	I board,	Own house,
1		1	26 00		
3	15, 41, 45	2	156 00	624 00	Own house,
2	26, 26	1		650 00	
	18, 43, 45	1			240 00
2	16, 32, 35, 38, 60	4	1,000 00		168 00
		2	300 00	1,266 00	480 00
2		None,	None,	All I made,	
3		2	208 00		146 40
1		1			120 00
3				705 00	99 65
2		1			300 00
1			150 00	630 00	
4	38, 41, 44	2	1,000 00	986 75	Own house,
1				650 00	
				700 00	144 00
	26, 62			400 00	64 80
	25, 28			400 00	72 00
5		1			72 00
				160 00	20 00
1	32			300 00	48 00
				500 00	Own house,
2	14, 32			450 00	60 00
1	1			393 00	74 00
				400 00	Rent, board, 250 00
6	38			500 00	15 00
3	42			360 00	84 00
3	29			612 00	100 00
2	31			800 00	150 00
2		1	72 00		72 00
1				400 00	120 00
2					120 00
1		3	960 00	360 00	
4	40, 30	1		518 60	64 80
1				400 00	120 00
				Board, 208 00	
	44, 45, 21, 19, 17	1		587 65	126 00
2				430 00	80 50
1		1		448 00	92 00

WORKINGMEN'S

KIND OF WORKMAN.	How many from inability to get work?	How many from other causes?	9. Your total wages from November 1, 1886, to November 1, 1887?	10. Your total wages for any period of three months or longer during 1887?	11. Total number in your family, including yourself?
No. 75, miner,		13	598 00	175 00	4
No. 76, miner,		13	450 00	125 00	5
No. 77, metal worker,		12	580 00	145 00	5
No. 78, metal worker,		9	600 00		3
No. 79, laborer,			510 00	135 00	3
No. 80, laborer,		5	475 00	130 00	Single,
No. 81, laborer.					2
No. 82, gas tender,					9
No. 83, wood worker,		10	598 00		11
No. 84, miner,		12	600 00	150 00	8
No. 85, miner,	12	8	450 00	135 00	4
No. 86, wood worker,		7	600 00		10
No. 87, laborer,			740 00	190 00	6
No. 88, laborer,			756 00	189 00	5
No. 89, metal worker,			750 00	200 00	4
No. 90, laborer,			756 00	193 20	4
No. 91, clay worker,		23	509 00	140 00	Single,
No. 92, clay worker,		12	507 50		Single,
No. 93, miner,			755 00		5
No. 94, metal worker,		2		150 00	4
No. 95, textile worker,		5	921 00		6
No. 96, clay worker,		16	512 50	165 00	
No. 97, engineer,			840 00		6
No. 98, coal mine worker,			626 15		4
No. 99, coal mine worker,			514 00		7
No. 100, coal mine worker,			491 06		4
No. 101, coal mine worker,			535 38		5
No. 102, wood worker,			600 00		3
No. 103, miner,			918 39		9
No. 104, miner,			853 56		10
No. 105, miner,			668 50		3
No. 106, miner,			1,267 06		8
No. 107, fireman,			688 70		8
No. 108, clay worker,		12	495 00	123 75	4
No. 109, miner,			779 71		7
No. 110, metal worker,			613 87		Single,
No. 111, miner,			760 11		3
No. 112, miner,			1,373 69		7
No. 113, miner,			660 00		7
No. 114, miner,			680 00		9
No. 115, miner,			724 04		5
No. 116, miner,			837 76		
No. 117, miner,			1,051 21		10
No. 118, miner,			745 76		
No. 119, miner,			720 00		3
No. 120 metal worker,			619 32		
No. 121, textile worker,		28	325 00	82 50	5
No. 122, teamster,		14	295 00		Single,
No 123, textile worker,	50				5
No. 124, metal worker,		5	1,200 00	300 00	4
No. 125, building trade,		33	769 00	225 00	Single,
No. 126, miner,			360 00		5
No. 127, miner,	12		408 00		
No. 128, miner,	12	58	376 00	120 00	7
No. 129, metal worker,		6	746 50		Single,
No. 130, miner,			384 00		7
No. 131, metal worker,			864 00		2
No. 132, miner,					8
No. 133, textile worker,	5				4
No. 134, miner,	60		594 00		2

RETURNS—Continued.

How many are under 12 years?	Ages of those over 12?	12. Number engaged in earning wages?	13. Earnings of all others in your family, besides yourself, during the past year.	14. What was the total cost of living for yourself and family during the year?	How much did you pay for rent?
1	13			$410 00	$64 80
3				400 00	60 00
2	16			290 00	Own house,
1					120 00
1		1		325 00	94 00
				Board, &c., 208 00	75 00
				460 00	60 00
4	19, 17, 14	2	840 00		
6	74, 72, 16			590 00	120 00
4	25, 30			450 00	65 00
2				450 00	60 00
3	21, 19, 17, 15, 13	3	200 00		75 00
2	18, 16			700 00	96 00
2	73, 31, 31			643 90	120 00
1	14			500 00	100 00
1	1	1		756 00	150 00
				300 00	
				230 00	
		2	84 00		
2	23, 33	1			90 00
2	12, 14			600 00	Own house,
2	28, 36			400 00	96 00
4					
2					
2					
2					
3					
1					
3		2	203 58		
3		2	139 31		
4		2			
4					
1				350 00	60 00
5					
1					
3		2			
2			780 00		
3			468 00		
3					
5	13, 16, 18	2			
1					
1	67, 61, 34, 30	3	600 00	900 00	192 00
				205 00	
3		1			114 00
2				750 00	150 00
				400 00	25 00
				240 00	63 00
				403 00	54 00
5				376 00	Own house,
					45 00
5		1		405 60	72 00
				500 00	60 00
5		2	94 00		
2		1			
	25, 23	1			

KIND OF WORKMAN.	How much did you pay for food?	How much did you pay for clothing?	How much did you pay for light and fuel?	How much did you pay for society dues?	How much did you pay for life insurance?
No. 1, textile worker, F,					
No. 2, brass worker,	$312 00	$100 00	$50 00	$16 50	None,
No. 3, iron worker,	About 375 00	200 00	72 00	13 80	$6 00
No. 4, textile worker, F,		52 00		5 20	
No. 5, miner,	360 00	180 00	48 00	None,	None,
No. 6, textile worker,	241 00	120 00	55 00	3 00	26 00
No. 7, iron worker,		48 00	69 00		
No. 8, iron worker,	364 00	60 00	40 00	22 80	
No. 9, textile worker,	240 00	Very little,	28 60	12 60	13 80
No. 10, textile worker, F,	700 00	300 00	30 00	15 00	75 00
No. 11, miner,	Food and clothing, $226 00.		15 00	7 00	None,
No. 12, textile worker,					
No. 13, engineer,	Don't know,	Don't know,	Don't know,	5 60	96 00
No. 14, textile worker,	300 00	75 00	40 00	20 00	15 60
No. 15, clerk,	Per week, 5 00	175 00		6 00	None,
No. 16, textile worker,	260 00	60 00	Per week, 65	None,	Per week, 30
No. 17, moulder,		75 00	30 00	20 00	10 00
No. 18, iron worker,	350 00	About 100 00	50 00	None,	None,
No. 19, engineer,	331 70	100 00	35 00	25 00	
No. 20, iron worker,				5 20	None,
No. 21, textile worker, F,		125 00		12 00	
No. 22, glassmaker,	300 00	100 00	50 00	3 50	25 00
No. 23, textile worker, F,	Don't know,	100 00	31 50	None,	None,
No. 24, textile worker, F,	Can't tell,	150 00	38 00	18 00	None,
No. 25, hatter,	Can't tell,	Can't tell,	Can't tell,	30 00	34 00
No. 26, hatter,	Can't tell,	Can't tell,	Can't tell,	3 00	None,
No. 27, hatter,	Can't tell,	Can't tell,	Can't tell,	24 00	None,
No. 28, wood worker,					
No. 29, iron worker,	Can't tell,	Can't tell,	Can't tell,	11 00	None,
No. 30, textile worker,	338 00	100 00	31 00	22 10	10 40
No. 31, steel worker,	1,049 00	500 00	100 00	50 00	
No. 32, lead worker,	520 00		50 00	14 00	
No. 33, steel worker,				3 00	
No. 34, steel worker,	313 00	87 25	27 50	33 00	44 23
No. 35, steel worker,		60 00		14 40	
No. 36, steel worker,				15 00	
No. 37, wood worker,		150 00	40 00	24 00	
No. 38, textile worker,					
No. 39, textile worker,				6 60	6 80
No. 40, textile worker,		50 00		18 00	26 00
No. 41, textile worker,	458 00	200 00	84 00	18 00	26 00
No. 42 cardmaker,					
No. 43, cardmaker,	360 00	120 00	39 00	8 10	4 00
No. 44, textile worker,			26 00	10 00	
No. 45, textile worker,	364 00	55 95	34 75	9 00	48 80
No. 46, shoe cutter,				13 28	20 24
No. 47, engineer,	400 00	160 00	40 00	16 00	23 40
No. 48, engineer,	496 00	120 00	62 00	13 00	12 50
No. 49, textile worker,	167 00	45 00	26 00	6 00	
No. 50, metal worker,	250 00	200 00	25 00		30 00
No. 51, metal worker,	140 00	120 00	25 00		10 00
No. 52, miner,		100 00	16 00		
No. 53, miner,	180 00		18 00	3 60	
No. 54, laborer,	140 00	90 00			20 00
No. 55, miner,	100 00	50 00	20 00		30 00
No. 56, metal worker,					
No. 57, building trade,	200 00	150 00	50 00		
No. 58, metal worker,					10 00
No. 59, clerk,	120 00	40 00	20 00	12 00	
No. 60, metal worker,		75 00	10 00		
No. 61, metal worker,	200 00	150 00	30 00		30 00
No. 62, teamster,	120 00	120 00	15 00		
No. 63, repairman,	200 00	200 00	30 00		30 00
No. 64, metal worker,	250 00	200 00	40 00		60 00
No. 65, textile worker,		100 00			
No. 66, textile worker,	180 00	70 00	20 00		
No. 67, textile worker,	360 00	75 00	21 00		
No. 68, laborer,					
No. 69, weighma ter,	300 00	120 00	22 80	11 00	
No. 70, textile worker,	210 00	40 00	20 00		
No. 71, gas tender,		90 00	10 90	10 00	

RETURNS—Continued.

KIND OF WORKMAN.	How much did you pay for food?	How much did you pay for clothing?	How much did you pay for light and fuel?	How much did you pay for society dues?	How much did you pay for life insurance?
No. 72, gas tender,	$350 00	$75 00	$30 00	$3 00	
No. 73, laborer,	200 00	75 00	20 00	25 00	$20 00
No. 74, miner,	200 00	78 00	20 00	24 00	24 00
No. 75, miner,	160 00	100 00	20 00		
No. 76, miner,	200 00	100 00	20 00	6 00	
No. 77, metal worker,	160 00	100 00	20 00		
No. 78, metal worker,					9 00
No. 79, laborer,	170 00	26 00	20 00	5 00	
No. 80, laborer,					
No. 81, laborer,	200 00	50 00	20 00	10 00	
No. 82, gas tender,	420 00	100 00	30 00	20 00	
No. 83, wood worker,	250 00	175 00	25 00	10 00	
No. 84 miner	300 00	200 00	25 00		
No. 85, miner,	200 00	60 00	12 00	9 00	
No. 86, wood worker,		50 00	25 00	6 00	
No. 87, laborer,	360 00	175 00	20 00		
No. 88, laborer,	360 00	127 00	30 99		6 00
No. 89, metal worker,	250 00	100 00	20 00		
No. 90, laborer,	450 00	100 00	40 00	6 00	
No. 91, clay worker,	Board, 225 00	75 00			
No. 92, clay worker,	150 00	100 00	10 00	20 00	
No. 93, miner,					
No. 94, metal worker,	360 00	120 00	24 00	22 80	
No. 95, textile worker,					
No. 96, clay worker,	108 00	90 00	20 00	20 00	16 00
No. 97, engineer,					
No. 98, coal mine worker,					
No. 99, coal mine worker,					
No. 100, coal mine worker,					
No. 101, coal mine worker,					
No. 102, wood worker,					
No. 103, miner,					
No. 104, miner,					
No. 105, miner,					
No. 106, miner,					
No. 107, fireman,					
No. 108, clay worker,	140 00	75 00	15 00	10 00	16 00
No. 109, miner,					
No. 110, metal worker,					
No. 111, miner,					
No. 112, miner,					
No. 113, miner,					
No. 114, miner,					
No. 115, miner,					
No 116 miner,					
No. 117, miner,					
No. 118, miner,					
No. 119, miner,					
No. 120, metal worker,					
No. 121, textile worker,					7 80
No. 122, teamster,	Board, 150 00	50 00		5 00	
No. 123, textile worker,	312 00	24 00	32 00	15 00	13 00
No 124, metal worker,	250 00	200 00	30 00		20 00
No. 125, building trade,	169 00	80 00	20 00		
No. 126, miner,		50 00	15 00		
No. 127, miner,	240 00	110 00	12 00	8 00	
No. 128, miner,	300 00	50 00	20 00	36 00	
No. 129, metal worker,	156 00	100 00	25 00	20 00	10 00
No. 130, miner,	300 00	24 00	9 60		
No. 131, metal worker,	200 00	150 00	30 00	10 00	20 00
No. 132, miner,					
No. 133, textile worker,					
No. 134, miner,	216 00	60 00	10 00	80	

How much did you pay for other things?	15. Were you in debt at the end of the year? If so, how much?	16. Have you saved anything? If so, how much?	17. Have your wages been increased during the year? If so, how much?	18. Have your wages been reduced during the year? If so, how much?	19. Have you saved any money during former years? If so, how much?	
. . . . .	. . . .	. . . .	. . . . .	. . . . .	.	.
. . .	No, ...	$150 00	No, ...	No, . . .	Very little,	See note 2
$25 00	No, ...	200 00	No, . . .	No, ...	About $1,000	See note 3
20 00	No, ...	No, ...	No, . .	No, ...	No,	See note 4
None, . .	No,	No, ...	8 cents per ton,	No, ...	About 300 00	See note 5
32 00	$11 00	No, ...	No, . . .	No, . . .	No,	See note 6
24 00	No, .	Yes, ...	From $18 to $24 per week.	No, ...	1,000 00	See note 7
35 00	No, . . .	47 00	No, ...	No, ...	200 00	See note 8
7 80	20 00	No, . .	No, ...	No, ...	2 40	See note 9
The remainder,	No, ...	No, ...	No, ...	No, . . .	No,	See note 10
150 00	35 00	No, ...	. . . . .	. . . . .	10 00	See note 11
. .	. . . . .	. . . .	. . . .	. . . . .		See note 12
Don't know, .	No, ...	A few hundred dollars.	1 00	No, . . .	No, ...	See note 13
45 00	100 00	Nothing,	1 cent per hour,	No, ...	60 00	See note 14
All the rest,	No, . . .	2 50	No, . . .	No, ...	No	See note 15
94 00	. . . . .	. . . . .	. . . . .	. . . . .	. .	.
73 00	No, . . .	About even, .	No, . . .	No, ...	300 00	See note 17
. . . . .	No, ...	About 400 00	No, ...	No, ...	25 00	See note 18
. . . . .	No, ...	42 00	No, ...	10 per cent.,	About 50 00 per year.	See note 19
. . . . .	No, ...	None this year.	No, ...	No, ...	60 00	See note 20
7 00	No, ...	About 100 00	No, ...	No, ...	200 00	See note 21
. . . . .	No, ...	See note 22, .	No, ...	No, ...	A little,	See note 22
. . . . .	No, ...	No, . . .	No, ...	No, ...	No, . . .	See note 23
. . . . .	No, ...	No, ...	No, ...	No, ...	No, . . .	See note 24
. . . . .	No, ...	No, . . .	No, ...	No, ...		See note 25
None, . . .	No, ...	250 00	No, ...	No, . . .	Lost by failure of savings bank.	See note 26
None, . . .	No, ...	100 00	No, ...	No, ...	No,	See note 27
. . .	. . . .	. . . . .	. . . .	. . . .	. . . .	See note 28
None, . .	No, . .	500 00	Piece work, .	No, . . .	3,000 00	See note 29
31 72	Doctor bill, $19,	None, ...	No, ...	No, . . .	75 00	See note 30
. . . . .	. . . .	. . . . .	No, ...	No, . . .	3,000 00	See note 31
. . . . .	. . . .	200 00	No, ...	No, ...	200 00	. . . .
. . . . .	. . . . .	. . . . .	No, ...	No, ...	. . .	See note 33
181 67	No, ...	50 00	No, ...	No, ...	225 00	See note 34
Car fare, 3 00	. . .	120 00	No, ...	No, ...	12 00	See note 35
. . . . .	. . . .	. . . . .	. . . .	. . . .	500 00	See note 36
20 75	. . .	250 00	No, ...	No, ...	4,000 00	See note 37
. . . . .	. . .	. . . . .	No, ...	No, ...	300 00	See note 38
. . . . .	70 00	No, ...	No, ...	No, ...	600 00	See note 39
. . . . .	No, . . .	40 00	No, ...	No, ...	200 00	See note 40
43 68	500 00	No, ...	No, ...	No, ...	. . .	See note 41
. . . .	Yes, ...	. . . .	No, ...	No, . . .	No,	See note 42
20 00	. . . .	. . . .	. . . .	No, ...	No,	See note 43
50 90	46 00	No, ...	No, ...	No, ...	50 00	See note 44
92 05	No, ...	24 00	No, ...	No, ...	Yes, .	See note 45
. . . .	. . . .	. . . . .	No, . . .	No, ...	No, .	See note 46
. . . .	. . . .	. . . . .	No, . . .	No, ...	. . . . .	See note 47
172 00	No, ...	110 50	No, ...	No, ...	6,000 00	See note 48
200 00	. . . .	. . . . .	No, ...	No, ...	600 00	See note 49
45 00	No, ...	Very little, .	No, ...	No, ...	500 00	. . . .
50 00	No, ...	150 00	. . . . .	. . . . .	. . . .	.
50 00	No, ...	200 00	. . . . .	. . . . .	. . . . .	.
. . . .	. . . .	. . . .	. . . .	. . . . .	. . . . .	See note 53
. . . .	. . . .	100 00	No, . . .	No, . . .	Not much,	.
50 00	No, ...	90 00	No, . . .	No, ...	350 00	. . . . .
. . . .	. . . .	. . . .	. . . .	. . . .	. . .	. . .
100 00	No, ...	500 00	. . . .	. . . . .	. . . . .	. . . . .
. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .
137 00	200 00	No, . . .	No, . . .	No, . . .	No,	. . . . .
25 00	No, ...	215 00	. . . .	. . . .	200 00	. .
40 00	. . . .	150 00	No, ...	No, ...	1,000 00	. . . .
20 00	No, ...	No, ...	No, ...	No, ...	No, . .	. . . . .
40 00	No, ...	No, ...	No, ...	No, . . .	No, . . .	. . . . .
90 00	. . . . .	. . . . .	. . . . .	. . . . .	Two lots, .	.
. . . .	. . . .	. . . .	. . . .	. . . . .	. . . .	. . .
10 00	. . . . .	200 00	. . . .	. . . . .	. . . .	. . . .
. . . .	. . . .	30 00	. . . .	. . . . .	. . . .	. .
. . . .	No, . .	No, ...	No, ...	No, ...	. . . .	. . . .
. . . .	50 00	No, . . .	No, ...	No, ...	. . . .	. . .
10 00	. . . .	172 00	No, ...	No, ...	No, . . .	. . .
30 00	. . . .	150 00	. . . . .	. . . . .	. . . .	. . . .

RETURNS—Continued.

How much did you pay for other things?	15. Were you in debt at the end of the year? If so, how much?	16. Have you saved anything? If so, how much?	17. Have your wages been increased during the year? If so, how much?	18. Have your wages been reduced during the year? If so, how much?	19. Have you saved any money during former years? If so, how much?	
$350 00	...	...	...	...	$200 00	...
12 00	...	$30 00	No,	No,	500 00	...
10 00	No,	No,	No,	No,	No,	...
65 00	...	186 00	...	...	1,000 00	...
14 00	...	50 00	...	...	1,000 00	...
...	...	...	...	$275 00	2,000 00	...
...	No,	No,	$149 65	No,	...	...
10 00	No,	185 00	...	...	400 00	...
100 00	No,	110 00	...	...	325 00	...
10 00	...	100 00	...	...	350 00	...
...	250 00	...	Ten per cent.,	No,	1,100 00	...
10 00	...	...	No,	No,	No,	...
10 00	...	...	...	...	...	...
109 00	No,	No,	40c. per day,	No,	No,	...
...	No,	100 00	No,	No,	$100 per year,	...
25 00	...	50 00	...	...	250 00	...
...	No,	112 00	20c. per day,	...	No,	...
30 00	...	250 00	...	...	...	...
8 00	No,	No,	No,	No,	Not much,	...
...	...	...	...	...	300 00	...
50 00	No,	278 00	...	...	...	...
...	...	...	...	...	...	...
...	No,	No,	...	...	Yes, when single.	...
...	...	300 00	...	...	Yes,	...
56 00	No,	200 00	No,	...	1,000 00	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
34 00	...	150 00	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	25c. per day,	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	26 50	...	...	...	125 00	...
50 00	No,	400 00	...	...	...	...
100 00	No,	350 00	No,	No,	...	...
...	100 00	...	Yes,	No,	...	...
...	No,	No,	Yes,	...	No,	...
5 00	No,	No,	Yes,	...	A house,	...
100 00	No,	300 00	...	...	500 00	...
...	25 00	...	10c. per ton,	...	No,	...
30 00	...	360 00	...	...	...	...
...	...	...	10c. per ton,	...	...	...
...	...	...	...	...	...	...
60 00	No,	150 00	25 per cent.,	...	No,	...

WORKINGMEN'S RETURNS.

No. 2. I favor eight hours for a day's work, as it would give a man more rest, and more time to be with his family, and would give more health and strength to the workingman generally.

I have worked at brass-finishing since 1857, except three years during the war, when I was in the army, and for part of that time I was connected with labor organizations, and I never found them to be a benefit to me personally. I have only worked for three firms since I have been at this business, and I never found it necessary to apply to the labor organizations to aid me against my employer, and if men would act with justice towards each other, such organizations would not be necessary, but I think that they are of use sometimes to act against unprincipled and grasping employers.

No. 3. My work being piece work my wages will vary from $11.50 to $2.50 per week, and as my employers are very busy at this time I can make a great deal of overtime. I am decidedly in favor of shorter hours and the piece-work system. Shorter hours for rest and recreation, and social and mental improvement to look after, guide and instruct our children, and to improve and elevate our general condition. I favor piece work because then the workman reaps the benefit of his own skill and exertion. I am opposed to labor organizations on account of the men who run them, but would approve of one for mutual improvement and assistance in the way of procuring employment, for sick and death benefits, building and loan associations, for buying food, coal, clothing and other necessaries of life, and for placing pure men in our legislative halls, but for the purpose of antagonizing our employers, "*never.*"

No 4. As I give my earnings to my parents I do not know the cost of living for the past year. I think from seven o'clock until six long enough for a day's work. I am not in favor of labor organizations for the reason that all laborers will never be of one mind, and without union there cannot be much benefit derived from them. My present condition is no worse than it was formerly.

No. 5. If labor organizations were properly carried out they would be all right, but they are not, and for that reason I am opposed to

them. I am opposed to a sliding scale of wages because the miner don't always get what belongs to him.

No. 6. I believe that nine hours for a day's work would be for the workmen's benefit, as it would give employment to surplus labor, and for myself, full employment the year round at an advanced rate of pay. I am in favor of labor organizations, because labor when organized, is better prepared to combat those manufacturers, who, at all times, aim at a reduction of the workman's pay, many can help one where one cannot help many. I have tried the coöperative plan for purchasing goods, but the one I was in, failed by reason of dishonest management, but I believe in it with good management.

No. 7. I would prefer eight hours for a day's work, although ten is not oppressive. I am opposed to labor organizations, as they are the quintessence of tyranny and an infringement on a man's personal liberty. I have never tried the coöperative plan of purchasing supplies. I think my condition is better than it formerly was.

No. 8. I am in favor of shorter hours, as it will give me more time to look after the welfare of my family. I am in favor of labor organizations when *arbitration* is the first principal. My condition is a little better now than formerly. The prices of necessaries of life will not permit of any reduction in wages, either by "sliding scale" or for any other reasons. I have never been connected with any coöperative society, but with their money affairs, honestly conducted and the business carried on with tact and judgment, I see no good reason why they should fail.

No. 9. Personally I am in favor of the eight hour system, we could supply the home markets in that time, and would give the surplus labor work. I am opposed to labor organizations in the way they are conducted in this country, I believe that every man has a right to sell his labor as cheap as he likes, and it is not right for any organization to say to an employer you must pay a poor workman as much wages as a good one. My condition is not so good now as it was ten years ago, as I am that much older. I firmly believe that all the trouble with regard to wages is caused by about fifty per cent. of the employers themselves, as when trade is dull they cut wages down, but when it revives they forget to raise the wages again; the workingman is easily satisfied if he is treated well. I belong to a coöperative society here, and we do very well, but not so well as we should. I think that if the government would only take the tax off

raw wool, the woolen business of this country would be a great deal better, and we could then compete with the foreigner, but since the jobbing houses have commenced to import the worsted cloth we cannot compete, and our business is going to the dogs.

No. 10. I am not opposed to labor organizations. My condition has improved in comparison to what it was in former years. I am not in debt but have saved nothing. My wages are favorable. Never tried the plan of coöperation.

No. 11. Eight hours ought to constitute a full day's work, as under the ten-hour system a miner is too much fatigued after his day's work to either enjoy such comforts as he has at his home, or to try to cultivate his mind. I am in favor of labor organizing for mutual benefit and protection of all employed. My condition is slightly better than it formerly was. I am in favor of the sliding scale, provided that it is based on a fair proportioning of the profits between capital and labor. I have seen coöperation succeed and I have seen it fail, and the cause of said failure was ignorance on the part of the coöperators and combined competition by business men. Three things are, in my opinion, needed for the bettering of the condition of coal miners, and they are shorter hours; payment of wages at shorter intervals; and last, but not least, the right and privilege of purchasing what he needs where he pleases. Although the company store system is contrary to law, it is still carried on to a great extent, and at many places the miner is told that he *must* patronize the company store, and it is an open secret that he either deals there or else, he is obliged to find work somewhere else, which is something not easily done.

No. 13. I am in general satisfied with my condition, but am in favor of shorter hours, so that the working classes may have steadier employment.

I am in favor of labor societies for a better understanding between employer and employed. I consider the sliding scale favorably.

In answer to the question of my opinion of coöperation, I would say, that I purchase my groceries wholesale.

No. 14. I am in favor of and content with the present working hours. I am in favor of trade unions to a certain extent for trade protection, but not for the employés to run the mill. I regard the sliding scale unfavorably. I have never tried coöperation but have always purchased for cash.

No. 16. I believe in nine hours for a day's work, as I believe that American workmen should work shorter hours than those of other nations. I am in favor of organizations as the only plan to be protected from pools and combinations; there is not much difference between my condition now and formerly. As to the other questions I would respectfully refer you to the Report of the Secretary of the Treasury on the revision of the tariff, foreign manufactures and advantages from free wool, pages 304 and 305.

No. 17. At our place we only mould from seven A. M. until three P. M., then we commence to cast, we only get paid for moulding. I, as a wage earner, am in favor of labor organizations for if carried on properly, they better our condition in every way, on the other hand if they are not carried on properly, then we are worse off than dogs. To tell the truth about it, our employers will reduce the prices for moulding, one and two cents each on a stove whenever he can without raising a fuss. I regard the sliding scale for fixing the wages favorably. I never tried any plan of coöperation.

No. 18. The amount that I saved in former years, was not all derived from working at my occupation of machinist.

I do not advocate shorter hours of labor at a less compensation per day.

I am opposed to labor organizations, as I prefer to be free to act for myself in the matter of work and wages.

I have never given the sliding scale for fixing wages any consideration.

Have dealt at a coöperative grocery store, which is still in successful operation, and it is, I believe, in its third year. I believe that the greatest trouble with coöperative stores is that the parties employed to run and manage them, have not the same interest in them as the individual storekeeper would have in his store.

No 19. I am in favor of eight hours for a day's work, as I think it would be the means of employing more men; but I would also want an increase of wages. I think that capital is trying to crush labor too low and the only remedy is by arbitration.

I regard the sliding scale favorably. I never have tried coöperation.

I do not see how men laboring for from $1.08 to $1.20 per day, or from twenty-seven to thirty dollars per month, and paying from seven to nine dollars per month for their house rent, and having families of from six to eight, can make an honest living, and those are about the wages that are paid here.

No 20. I favor a half holiday on Saturday, as it gives the workman a chance to transact any business which he would otherwise have to lose time to do. It also gives him some time for enjoyment. It is also a benefit to the employer, as it gives him time to make repairs, if he has machinery and if not, there are other ways in which he will be benefited. I am in favor of labor organizations, but I do not think that all the laboring classes are educated well enough to stand together for right. We want to be educated, and I think that compulsory education should be the law all over this country and that foreign labor that comes here to undermine ours, should be kept out of the country. I believe in compensation for labor on merit. I have been connected with the coöperative business for the purpose of getting my groceries cheaper, but we failed, by reason of our ignorance and want of confidence in each other. It is a difficult thing to fight this world's battles with comrades of all nations and colors.

No. 21. I think that if ever we should come to have free trade in this country, I for one shall go back to England. My husband is a citizen, but he is of the same opinion. I am in favor of labor organizations if properly carried on, but I think that the Knights of Labor to which I belong, has made the greatest headway. My condition is far better here than it was in the old country. I regard the sliding for fixing wages favorably. I have tried the plan of coöperation, but it failed through the dishonesty of a person connected with the society, but we have one here in Kensington, Philadelphia, which is succeeding very well at present.

No. 22. I am in favor of labor organizations. I belong to the American Flint Glass Worker's Union. I consider my present condition as very good. I never tried the coöperative style of getting groceries or other goods.

No. 23. I do not desire any shorter hours for the reason that if we have plenty of work we are allowed to make as much wages as possible. I am individually opposed to all labor organizations for the reason that I do not think that they have the right to dictate to any employer as to the manner in which he shall conduct his business; nor can I see where they benefit the working people, especially those who work in mills, as *their* work is governed by the state of the markets. I have never tried any plan of coöperation, as I always have managed to have enough laid aside to make my purchases. My condition in life when my children were small was very poor indeed; but it is improving now, for they are beginning to help themselves.

No. 24. I do not desire shorter hours, as at the present hours, when work is plenty, we can make more wages. I do not favor labor organizations, as I deny the right of any society to dictate to me how much I shall work for nor to my employer how he shall conduct his business. My condition in life is as good, or perhaps better than it ever was was, as I have more experience and understand how to manage better.

No. 25. I am perfectly satisfied with my hours of labor. I am opposed to all labor organizations, as I formerly belonged to one that was connected with my trade of a hatter, and I lost so much time by reason of my membership that I severed my connection with all of them. Never had experience with the sliding scale for regulating wages, nor with coöperative societies.

No. 26. I am opposed to all labor organizations, having lost too much time and money in consequence of strikes ordered by them.

No. 27. I am opposed to the labor organizations as my condition has, for the last fourteen years, been much better out of them than it would have been in them.

No. 28. I think that the day should be divided into three equal parts of eight hours each: eight for work, eight for rest and for the acquirement of knowledge, and eight for sleep.

No. 29. I am in favor of shorter hours of labor, so that I could have more time with my family and for mental culture. I am opposed to labor organizations, as I do not think that they benefit the workingman. My condition has been good ever since 1873, and I save more money every year. I am in favor of every man making terms, as regards wages, to suit himself. If he is a good workman he can always command good wages. I do not believe in coöperation, as I keep a grocery store myself which my wife looks after when I am away at work. This is the best kind of a coöperative store.

No. 30. Ten hours is a short enough day for me. I am in favor of labor organizations. My condition is better now than formerly. I regard the sliding scale for regulating wages favorably.

There is a coöperative store in my section, but I live too far from it to deal there. If well managed they pay some years good percentages, and others not so much. I certainly favor coöperative stores.

No. 31. I cannot say that I am very much impressed in favor of labor organizations for the reason that when I needed assistance from them none was forthcoming. I think well of the sliding scale for fixing wages.

Have never tried coöperation.

No. 33. I feel favorably inclined to eight hours for a day's work, as it would leave a chance for others who have no work now to get a share so that they would, in course of time, be able to live on the profits of their own labor, instead of living off those who now work ten hours per day. Since I have joined the Knights of Labor I feel more hopeful concerning my condition in life now, than formerly, although we, in this shop, have not struck for more pay, we feel satisfied that our wages are not so liable to be cut down.

I have never tried any plan of coöperation as yet, but I am one of a number of workmen in my business who are going to establish a union shop, and we hope and expect that it will be a success. We have a district assembly composed exclusively of our trade.

No. 34. The year just past has been a very busy one in the saw business, which makes my wages run high. In summer we work five and a half days per week. I would rather work full time all the year round at ten hours per day and no night work, but night work cannot always be avoided in such a large business.

I am opposed to labor organizations, as I think that a man should be free to work for who he pleases and for what he thinks fair wages.

I think that the greatest enemies the workingman has, are rum, trusts or pools, and gigantic monopolies that are chartered and given power by the government.

No. 35. I am in favor of the Saturday half holiday, but am opposed to shorter hours at the present rate of wages because we do not get enough money now, but I think that the employers could give us shorter hours and pay higher wages, and it would be to their advantage because there would be more work done. Shorter hours would make more business all round. I am in favor of organized labor as my condition is not as good in regard to wages as it was in 1885 as we have to do more and finer work and get no more recompense for it.

No. 36. I am perfectly satisfied with my present condition, as I have worked for the same firm for twenty-seven years, and if all other employers were like them there would be no trouble nor no call for joining labor organizations.

No. 37. My condition is about the same as it has been for a number of years as I have worked for the same firm for the last fifteen years. I have never belonged to any coöperative society, for I don't think much of them. I am the owner of two houses; the one I live in is worth twenty-five hundred dollars and the other one, which I rent, is worth three thousand dollars, and for which I draw twenty-four dollars per month rent and on which there is a mortgage of the sum of fifteen hundred dollars.

No. 38. I favor shorter hours in order to restrict production, and give employment to a larger number of people. I am heartily in favor of organized labor associations if conducted on sound principles, as without such a workman would be completely at the mercy of his employer, and because they give men of the same trade a chance to exchange opinions and experiences with each other. My condition has been about the same for the past five years. I know nothing personally about the sliding scale of wages, but I regard it as a means of robbing the workman. A day's work is worth a day's pay without regard for fluctuations in values.

No. 39. I am in favor of labor organizations, but not in the manner that the Knights of Labor are carried on. I believe in the right of every employer to hire whom he pleases, and I believe that every man has a right to work wherever he can procure work; but I don't believe in the right of anybody to try to bulldoze men into joining any labor society, but I believe in a man's right to join them if he wants to.

No 40. Up to six years ago I did not know what it was to lose a day through dull times, but since, I have not worked six months at a time without a dull spell coming on which affected the departments of carding and spinning for months at a time. My condition is worse than it was six years ago, as I then made about three dollars a week more than I do now, and had full time year in and year out. I am still holding the same position and it still continues to get worse; I mean in working short time. In regard to organized labor, I am in favor of every craft having of its own as it would prevent strikes and educate the working people.

No 41. I believe the Knights of Labor did some good some two years ago, but I don't think they are doing much good now, as I think they are throwing away what they have gained. I don't think my condition is as good as it was in former years. I believe in getting

the highest wages that I can for myself. There may be other branches of the textile business which could be worked on the sliding scale. I have tried coöperation in the grocery business, but we failed. Cause—bad management and bad store-keepers.

No. 42. I am satisfied with ten hours for a day's work. I am opposed to labor organization and opposed to strikes. I never tried coöperation.

No 43. I do not desire shorter hours than ten hours per day, but I think that always, when practicable, a Saturday half holiday should be conceded.

I am decidedly opposed to labor organizations, having noticed that it is the inferior workman who always takes the initiative in any shop troubles, which has a tendency to reduce the pay of the good workman in the long run, and the organizations are made up of tyranny, drunkenness and other vices, leading to dissatisfaction, strikes, &c.

My condition is better than formerly. I know nothing of the sliding scale for regulating wages and have never been in a coöperative society.

No. 44. I am in favor of shorter hours of labor, because the present mode throws too many workingmen out of employment. Forty hours of work every week would be enough and that would give employment of five days of eight hours each to all, and Saturday for pleasure would be far better for all. It is true that the European laborer makes longer days, but he produces less, he works slower and has more rest in daytime and consequently makes better work. He is not treated like a slave and has the full Sunday for amusement and rest, instead of being forced to stay at home on Sunday or go to church, and nowhere else. He can go to church if he wants to, and can get some pleasure and amusement, as everything is open on that day, and I challenge anybody to prove that his morals are lower than his fellow here. My condition is no different than for years past.

I belong to a coöperative society and am satisfied with its working so far.

No. 45. I am in favor of eight hours constituting a day's work, for the reason that I would then be steadily employed and would not, as now, be housed up for ten hours.

I am also in favor of labor organizations, as my labor is my only capital and in my opinion, organization is its best protector.

My condition was better formerly than now, as I then received forty cents for the same amount of work that I am now receiving thirty for

I regard the sliding scale for fixing wages unfavorably.

I have tried coöperation and its success was doubtful from the beginning and it finally failed from mismanagement.

No. 46. I am opposed to labor organizations, as I believe that the only ones benefited are the poorest mechanics, who cannot prosper at their vocations, but take great interest in organizations, which to them are more remunerative than work.

Concerning labor troubles, I think there should be a law enacted by the Legislature, compelling arbitration between employers and employed. I also favor the sliding scale for fixing wages, if my interpretation is correct, viz: When business is dull, employés to accept reductions, and when it is brisk, they to receive a proportionate advance.

I tried coöperation in a land association, which was very successful, and it has enabled me to build a home which I am paying for by monthly installments. Also in the purchase of coal, by which I get my coal one dollar per ton below the market price.

No. 47. I am an engineer in a rolling mill. I think labor organizations are a very good thing, for they have often prevented the bosses from reducing wages, but I am opposed to the Knights of Labor for their tyranny over so many that have joined them blindly and to their sorrow, and who yet have not the nerve to withdraw.

My condition is better since a strike we had some time back, as both the bosses and men were sick of it, for since then we work to each others advantage.

I consider the sliding scale the nearest to honorable dealing between the employers and employed. As to coöperation, in 1873 I was secretary of a society called the "Sovereigns of Industry." It was a coöperative society, but we could not get the people in whom it was intended to benefit, as they preferred the old account book system, to dealing with us for cash, and so the society died out, but it would have been a good thing properly supported.

No. 48. I am satisfied with the present hours of labor. I am also in favor of labor organizations properly conducted, but opposed to strikes in any form as they are, in my opinion, a detriment to the workingman and should be avoided.

I am in favor of the sliding scale for fixing wages.

I have never tried any plan of coöperation, but would be in favor of anything to benefit the honest workingman.

No. 49. I bought a house for myself in 1886 and have laid out a good bit of money since in improving it.

My condition is better than formerly.

No. 53. I am in favor of shorter hours for a day's work. I think eight hours enough for a man to labor in a mine. I am also in favor of labor organizations to better the condition of the working classes. I also can say that my condition is a good bit better than it was a year ago. In regard to the sliding scale, I can't say much for I don't understand it as I should. We have no coöperative store here, but a few families send to Pittsburgh for groceries and we find that we can save money by so doing, but it is only since we got the advance and the semi-monthly pay, that we have been able to do it, and now I can have a few dollars over to get my supplies where I like, and I consider my condition much improved on that account.

No. 69. I am not opposed to labor organizations, if their object is to advance and ennoble the workman. Yet I am opposed to those now in existence, as they appear to be in the interest of only a few.

My condition is better now than it was, as I have risen from a laborers position to a better one, by diligence and close application to my work.

Coöperation was tried here a short time since, but it did not succeed owing either to a lack of energy on the part of the workingmen or else from some false representations.

No. 72. I believe that ten hours is not too much for a day's work, and I do not believe in either of them having organizations to work against each other. I believe that if labor gets in a tight place let capital help him out, and if capital gets in a tight place let labor stand by him, and let the foreign laborer be kept out of the country. I never tried any plan of coöperation for getting my groceries, for the reason that I did not believe in it.

No. 74. My condition is better than it was formerly. I believe in the sliding scale for fixing wages. I have tried the coöperation plan for getting my groceries and think it is a good thing.

No. 79. I would like eight hours for a day's work so that I might have more time for recreation. I consider my condition much better than it formerly was. I regard the sliding scale as a good thing for the workingman.

No. 82. I am not in favor of any labor organizations, there is no money in them for the workingman nor never was. I have my own scale of wages and if one man don't pay me what is right, I go to another place.

No. 85. In reference to the hours of labor, I am of the same opinion of every miner that I ever heard express his opinion, and that is that eight hours is sufficient for a day's work in the mines, for the reason that we are deprived of the fresh air and light while at work. I am in favor of labor organizations because I think it is better for the laboring classes to be combined. I have never been interested in any plan of coöperation for getting my necessary requirements, so that I cannot speak knowingly about it. I have a favorable opinion of the sliding scale for fixing wages.

No. 90. I am opposed to any organizations of either capital or labor, and I think ten hours a fair day's work.

No. 121. Great injustice is sometimes done to work people by foremen showing partiality. As to the hours of labor, I think that for at least six month of the year the hours of labor should be eight per day, without reduction of pay, I am speaking for women, we are in a large city and some of us have to go long distances from our work to our homes, and it is not very pleasant nor safe in some of our streets. I am opposed to the present system of conducting labor organizations. My condition I consider to be better than it formerly was. The hands in our mill started a coöperative store some time ago, but it failed.

No. 123. My condition is not so good as formerly, because we have had so much short time these last four years. We would have full time for perhaps three months and then go on half or three-quarter time, always expecting that the next time we would start on full time it would be for good.

No. 128. I am in favor of eight hours for a day's work, as it would give the miner more time to improve his mind upon matters pertaining to the improvement of the laboring classes. Am in favor of labor organizations as they place a check on unjust employers.

My condition is growing worse every year, as the loss of time is growing greater each year. I think well of a sliding scale for fixing wages, for if administered honestly it would be of great benefit to the miners.

I am about to try the coöperation scheme for getting my supplies. A part of the year I was employed at a mine where the operator had

a store, and if we were known to purchase our supplies elsewhere, our discharge was certain. The "pluck me" store is one of the worst evils the laboring man has to contend with.

No. 130. Shorter hours of labor would be a benefit to the workingman, as working as I do now, from ten to twelve hours, leaves us no time for study or recreation.

My condition is better than it was a year ago, because I have received an advance of ten cents on a ton, but my earnings are not what they should be for the labor performed and the dangers encountered.

I am in favor of the sliding scale for the regulating of wages, providing that the operator could be obliged to live up to his part of the agreement as well as the miner.

No. 132. I think shorter hours of labor would better the condition of the miners of this country. I think that eight hours are long enough to work among the powder smoke and water that the miner has to contend with, for after a man has worked undergroud from ten to twelve hours he does not feel like anything, when he comes home, but going to bed, as he is completely worn out, and he has no time to try to educate himself.

I am in favor of labor organizations, and I think the mining laws should be amended so as to give a mine inspector the power to decide whether a working place is safe or not, and if his decision should not be satisfactory to the operator he should have the power to call in one or two other inspectors, and their joint decision should be final.

No. 133. I believe in shorter hours, for then I think we would have steady work. I am in favor of labor organizations if they are properly carried on, but some of the people who get at the head of them get there for what they can make. My condition is not so good as formerly. I saw a sample of coöperation and it was no good. Some few might have reaped some benefit from it, but it failed through bad management.

No. 134. I am in favor of shorter hours of labor, because it would give me more time for moral and intellectual education, and would create a demand for labor which is now idle.

I favor labor organizations, as they are the means of teaching the ignorant their duties to themselves and to their employers, and as a medium through which disputes may be settled without resorting to undesirable strikes.

I favor a sliding scale for fixing wages, where a rate can be established that will prevent starvation wages from sliding upon us.

Catsburgh Mine Tipple.

FIRST BITUMINOUS DISTRICT.

To the Hon. Thomas J. Stewart,

Secretary of Internal Affairs:

Sir:—I have the honor herewith to present my third annual report, as inspector of mines for the First bituminious coal district, for the year ending December 31, 1887.

In this report is given the number of fatal and non-fatal accidents during the year, the coal production and shipments, the number of employés, &c.

The production of coal mined, as per statement to this office, is 1,549,061 tons, a decrease of 204,010 tons, as compared with the year 1886. The immediate cause of this was the low water in the Monongahela river, which prevented the shipment of coal to the lower markets for nearly six months, and as a consequence, the mines of this district located along the river, have not been in operation very steadily during that period. Had it not been for this enforced stoppage I would be able to report the largest output ever made in this district, if the amount of coal produced by those mines during the early part of the year could be taken as a criterion.

The following table will show the fatal and non-fatal accidents during the year, and the causes of the same:

Fatal.

By falls of slate,	3
By falls of coal,	1
By being run over by "Dilly" trip,	1
By being caught between car and coal pillar,	1
Total	6

Non-Fatal.

By falls of slate,	11
By falls of coal,	7
By mine cars,	3
By fire-damp,	13
Miscellaneous,	7
Total,	41

In reply to circulars issued from this office to the operators of this district for statistics from the mines I have compiled the following table:

Table.

Number of miners in the district,	72
Number of persons employed inside,	4,782
Number of persons employed outside,	436
Total number of persons employed,	5,218
Number of mules employed inside,	295
Total production in tons of coal (as per circular) mined during the year,	1,549,061
Number of tons mined per life lost,	258,176+
Number of tons of coal mined per non-fatal casualty,	37.781+
Number of persons employed per fatal casualty,	869+
Number of persons employed per non-fatal casualty,	129
Number of coke ovens in the district,	28
Number of kegs of powder used in the mines,	3,425
Number of tons coke produced,	21,472

By comparing the above table with that of 1886, it will be readily seen that the loss of life and personal injury is less, while the coal production and the number of persons employed in ratio have been increased.

Two fans, three furnaces, and one fire-basket have been erected for ventilating purposes during the year, and I am gratified to say, in this connection, that the condition of the miners in this district is steadily improving.

I send with this report a photograph of the Catsburgh mine "tipple," and also a map of the Albany mine, kindly furnished me by Superintendents Keil and Hogg, of the above named mines.

All of which is respectfully submitted.

Yours truly,

HENRY LOUTTIT.

MONONGAHELA CITY,
February 16, 1888.

Mines on the Pittsburgh, McKeesport and Youghiogheny Railroad.

Port Royal mine located at Port Royal. Ventilation is produced by a fan working as an exhaust. Mining machines of the Lechner pattern are in use here. General condition of mine, fair. Frank R. Bradford, superintendent; John Simpson, mine-boss.

West Newton shaft is in fair condition as regards ventilation and drainage. Among other improvements made in the interior of this mine is a stationary engine. The engine is placed near the bottom of the shaft and is a double acting with two 15×24-inch cylinders supplied with steam from boilers located on top. Length of plane 4,800 feet. A. W. Osborne, superintendent; John Smith, mine boss.

Mines on the Chartiers Valley Railroad

Are Allison, Boon and Cook. All are drift openings and worked on the single-entry system. In general, the above mines are in fair condition.

Enterprise.—This mine is located near Washington and operated by J. V. H. Cook & Son. Has been idle for some time previous to the present operators commencing to work it. A shaft opening, 173 feet in depth, 8×12. Mine-boss, J. V. H. Cook.

Mines on the Monongahela River.

Snow Hill.—Operated by the Alps Coal Company. General condition of the mine, fair. The improvements made at this mine during the year consists of a plant of underground haulage by the tail-rope system by which they convey the coal 3,300 feet to the tipple by the aid of two stationary engines, 10×20 link motion, of about fifty-horse power, stationed near the pit mouth. They use 10,000 feet of steel wire line, five-eighths as a pulling and nine-sixteenths as a tail-rope line. Drums for the lines are forty-six inches in diameter, with tail-rope sheive or bull wheel of the same diameter wood filled. Steam for the engines is from a steel boiler thirty-eight inches in diameter and twenty-four feet in length, with two flues. Tensil strength, 60,000 pounds. The whole plant gives general satisfaction, and affords the saving of the expense of four drivers and mules. They can make the round trip, including the hitching of both trips, in fifteen minutes. The plant cost about $5,000.

Globe mine owned and operated by the Globe Coal Company. This company has made some changes in and about the mine during the year, which will increase the output and somewhat decrease the general expenses of operating the mine.

Hilldale mine is operated by the Hilldale Coal Company. It consists of two face headings and three cross headings. Condition of mine, fair.

Tremont.—Situated near Belle Vernon and operated by John A. Wood & Son. This mine was in full operation only one hundred and

eighty days during the year, but they kept a few entries going the greater part of the time for the purpose of opening up a new field of coal, and making another opening available.

Little Redstone, *Little Pittsburgh* and *Merchant* mines are small drift openings worked on the single-entry system.

Little Alps, *Troytown*, *New Eagle* and *Iron City* mines not in operation at present.

Webster.—Owned and operated by Thomas Faucett & Sons. Opened by drift and worked on the double-entry system. During the year the ventilation has been greatly improved by the erection of a large fan. When this fan was running at forty-four revolutions per minute it was exhausting 37,400 cubic feet of air. It is the intention to enlarge this airway as soon as possible, and when this is done the fan will, no doubt, give better results than at present.

J. S. Neel's mines are four in number—Garfield, Cincinnati, Eclipse and Greenfield. The two former are located near Courtney and the latter near Coal Centre. They are worked on the double-entry system and ventilated by furnaces. The mines are in pretty fair condition in general.

Stony Hill.—Owned and operated by John N. Dixon. During the early part of the year this mine was operated by a company known as the "Stony Hill Coal Company," but they met with some difficulties and abandoned it, when it passed into the hands of the present operator, who has had some trouble with the mine, owing to some entries coming in before the old company vacated, which necessitated the opening up of the greater part of the mine before much coal could be mined.

The Mines operated by T. J. Wood, are Caledonia, Champion and Wood's Run. These are all drift openings and located at Wood's Run. Worked on the double-entry system and ventilated by a furnace in each mine. The mines named above are all well drained, and the ventilation, in general, is fair.

Banner and Cliff mines located near Shire Oaks. Operated by J. M. Risher. These mines are drift openings and have facilities to ship their production both by river and rail.

Catsburgh.—A drift opening worked partly on the block and double-entry systems. Ventilation is produced by a fan twelve feet in diameter put up during the year. The mine consists of three face and four butt headings. A photograph of the tipple accompanies this report.

Hall mine operated by John Hall & Sons. The mine has given the management a great amount of trouble owing to a "squeeze," affecting their main entry and nearly closing it. On my last visit the ventilation was very poor, but they were working to improve it in this respect.

Fayette City.—Situated near Fayette City and operated by Samuel

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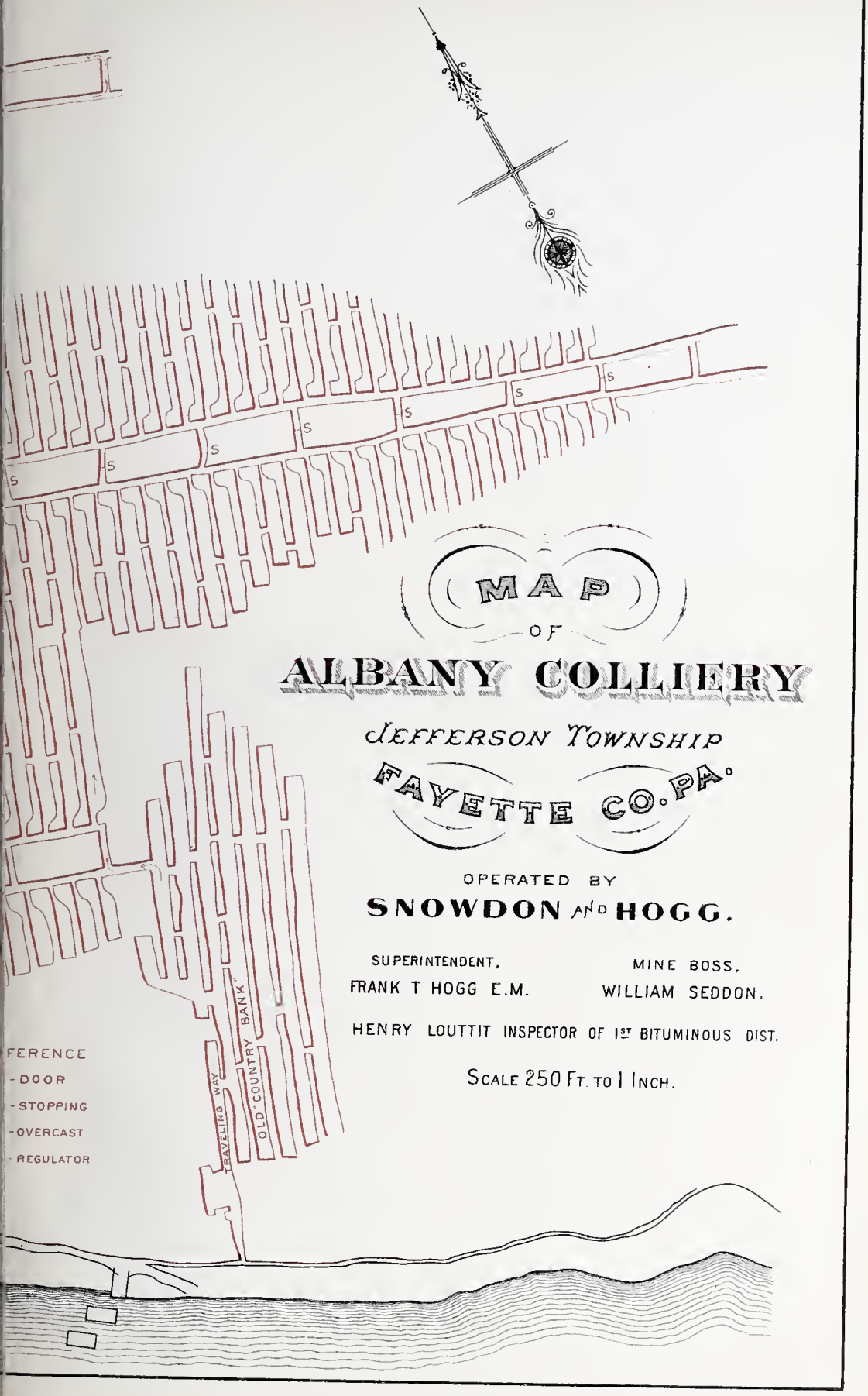
MAP
OF
ALBANY COLLIERY
JEFFERSON TOWNSHIP
FAYETTE CO. PA.
OPERATED BY
SNOWDON AND HOGG.
SUPERINTENDENT,
FRANK T HOGG E.M.
MINE BOSS,
WILLIAM SEDDON.
HENRY LOUTTIT INSPECTOR OF 1ST BITUMINOUS DIST.
SCALE 250 FT. TO 1 INCH.
FERENCE
- DOOR
- STOPPING
- OVERCAST
- REGULATOR
TRAVELING WAY
OLD COUNTRY BANK
S

O'Neil. The tipple at this mine was taken away by the ice in 1872, and the mine has not been in operation since that time until it passed into the hands of the present operator, who has built a new tipple, relaid the road in the mine with T iron, put in a fire basket for ventilating purposes, changed the system of working to the double entry plan and is now driving entries as rapidly as possible to open up the mine so that a large output of coal can be secured.

Rostraver.—Tipple was burnt in March, and has not been rebuilt.

Ivil mine operated by James Jones. Since my last report a shaft has been sunk some seventy feet in depth. Entries are now being driven to connect with the above shaft. When this is done a new ventilator will be put in. The ventilation and drainage have been somewhat improved during the year.

Abe Hays mine owned and operated by the Abe Hays Coal Company. Condition of mine, fair.

Umpire.—Operators, C. L. Snowden & Co. Within the present year the natural syphon used in the mine has been replaced by a steam one. The coke ovens, which have been idle for a number of years, have been repaired and fired up, and they are now shipping coke from them.

Climax mine operated by J. S. Neel & Co. This mine was operated part of the year by R. C. Campell, but in August last it passed into the hands of the present owners who have made some improvements on it, such as blasting down the roof and extending the slope. The condition of the mine as to ventilation and drainage is also being improved.

Knob.—Knob Coal Company operators. Taken as a whole this mine is in pretty fair condition as to ventilation and drainage. This company has made some needed improvements in and about their tipple to facilitate the handling of the coal.

American.—Washington Coal Company, operators. Mode of working, double entry. Ventilation is produced by furnace power. The condition of the mine has been improved as regards ventilation and drainage during the year.

Albany.—Snowdon & Hogg, operators. Superintendent, F. T. Hogg; mine boss, William Seddon. This mine was only in operation about one hundred and seventy-six days during the year, owing to the low stage of water in the river. The company has taken advantage of this enforced idleness, to make some improvements in and about the mines, the outside by building abutments; the inside by building a ventilating furnace. The intention is to ventilate the mine by separate splits, and when this is done it will be one of best ventilated mines in the district. A map of the mine accompanies this report.

Carondelet.—A drift opening, operated by E. C. Furlong & Son. Worked on the single and double entry system. During the year

they have sunk a shaft for ventilating purposes. The ventilation and drainage of the mine has been somewhat improved from last report.

Clipper.—Allenport Coal Company, operators. On my last visit the ventilation and drainage were defective in some parts of the mine, but the company is hard at work to improve the condition of it.

Cedar Hill.—Bradford, Lynch & Co., operators. A drift opening and consists of four butts and one face heading. Number of employés, one hundred. Condition of mine, fair.

Black Diamond mine is operated by W. H. Brown Sons. Ventilation is produced by furnace power. Worked one hundred and seventy-eight days during the year.

Coal Bluff mine is operated by the Monongahela and Peters Creek Gas Coal Company. Ventilation is produced by furnace power, and worked both on the single and double entry systems. Fire-damp is generated in such quantities as to take careful watching on the part of the officers of the mine to prevent accidents.

Gilmore, *Columbia* and *Stockdale Mines.*—I have nothing to add in regard to those mines but what has been stated in previous reports.

The Mines on the P. & W. Division of the B. & O. Railroad, are Anderson, Eclipse and Nottingham, located at Venitia. Union Valley and Gastonville, located at Finleyville and Gastonville, respectively. The above mines all show an improvement in their condition as regards ventilation and drainage.

Improvements.

Union Valley. A five ton locomotive has been purchased to haul the coal from the upper drift to the tipple of this mine.

Gastonville. A ventilating furnace has been built at this mine.

Mines on the Monongahela Division of the P. R. R.—Acme, Bowman, Courtney and Buffalo. These mines are all drift openings and worked on the double entry system. Artificial means are employed to produce ventilation, and they all show a marked improvement in their condition in this respect. The drainage is fair, with the exception of the latter named mine, which has been very unsatisfactory of late, but arrangements are now being made to remove the cause of complaint.

Mines on the P., C & St. L. R. R.—Midway and Black Diamond, located at Midway. Midway mines were operated during the early part of the year by the heirs of G. W. Crawford, but recently they passed into the hands of F. B. Robbins, who is making some very important changes. Entries are being driven as speedily as possible. The main heading has been enlarged in area, by taking down roof and taking a strip of the side preparatory to putting in a stationary engine and wire line. A new tipple is being built and new sidings put in.

Black Diamond mine is a new drift owned and operated by Thomas

Taylor. Ventilated by a small fire basket and worked on the single-entry system.

Primrose mine. Located at Primrose. Worked on the single-entry system and ventilated by a boiler furnace and exhaust steam from a pump. General condition of mine, fair.

The *Jumbo* and *Brier Hill* mines are located at McDonald, and they are in fair condition as to ventilation and drainage.

Nickel Plate mine is also located at McDonald. Owned and operated by J. D. Sauters. This is a new drift opening. At present the ventilation is produced by a small furnace, but it is the intention to replace this with a twelve-foot ventilating fan.

Greene County Mines.

The mines in this county being operated at present are all small openings and only worked to supply the local trade. None of them at present have a sufficient number of employés to come under the provisions of the law.

TABLE I.—Showing Location of Collieries in the First Bituminous Mine District.

Name of Colliery.	Name of Operator.	Location—County.	Name of Superintendent.	Postoffice Address.
Albany,	Snowdon & Hogg,	Fayette,	Frank T. Hogg,	Brownsville.
American,	Washington Coal Company,	Washington,	Thomas S. Briggs,	Roscoe.
Acme,	Stockdale Coal Company,	do.	Andrew Braynell,	do.
Allison,	Jonathan Allison,	do.	Jonathan Allison,	Washington, Pa.
Abe Hays,	W. S. B. Hays,	do.	Thomas S. Hutchinson.	Monongahela City.
Anderson,	D. M. Anderson,	do.	D. M. Anderson,	Veuitia.
Banner,	John M. Risher,	do.	John M. Risher,	Shire Oaks.
Black Diamond,	W. H. Brown Sons,	do.	James Lontit,	Mouongahela City.
do.	Thomas Taylor,	do.	Thomas Taylor,	Midway.
Black Hawk,	Black Hawk Coal Company,	do.		Fredericktown.
Borman,	Eli Leonard,	do.	Eli Leonard,	Brownsville, Fayette county.
Boon,	Stoner & Co.,	do.	Albert Shupe,	Canonsburgh.
Brier Hill,	Patterson & Sauters,	do.	J. D. Sauters,	McDonald.
Buffalo,	Yonghiogheny Coal Company,	do.	C. W. Bristal,	Courtney.
Catsburgh,	Louis Staib,	do.	Adam Keil,	Mouongahela City.
Cincinnati,	J. S. Neel,	do.	Harry Neel,	Courtney.
Calidonia,	T. J. Wood,	do.	T. J. Wood,	Woods Run.
Courtney,	Courtney Coal Company,	do.	W. A. Kennedy,	Courtney.
Cliff,	J. M. Risher,	do.	J. M Risher,	Shire Oaks.
Clipper,	Allenport Coal Company,	do.	Robert Jack,	Allenport.
Cook,	J. H. V. Cook,	do.	J. V. H. Cook,	Canonsburgh.
Champion,	T. J. Wood,	do.	T. J. Wood,	Woods Run.
Coal Bluff,	Monongahela & Pittsburgh Coal Co.	do.	Thomas Watkins,	Coal Bluff.
Cedar Hill,	Bradford, Lynch & Co.,	Fayette,	Terrence Lynch,	California.
Carondelet,	E. C. Furlong & Son,	do.	E. C. Furlong,	Roscoe, Washington county.
Climax,	Thomas Neel & Co.,	do.	Thomas Neel,	Brownsville.
Columbia,	J. T. Jones,	Westmoreland,	J T. Joues,	Webster.
Camp,	Thomas Flowers,	Greene,	Thomas Flowers,	Waynesburgh.
Eclipse,	J. S Neel,	Washington,	P. J. Forsythe,	Coal Centre.
Do.	Osborne, Senger & Co.,	do.	A. W Osborne,	Venitia.
Enterprise,	J. V. H. Cook & Son,	do.	J. V. H. Cook,	Canonsburgh.
Fayette City,	Samuel O'Neil, (attorney,)	Fayette,	Samuel O'Neil,	Fayette.
Garfield,	J. S. Neel,	Washington,	Harry Neel,	Courtney.
Greenfield,	do.	do.	P. J Forsythe,	Coal Centre.
Gastonville,	Pittsburgh & Chicago Gas Coal Co.,	do.	D. W. Von Eman,	Gastonville.
Globe,	Globe Coal Company,	do.	R. J. Gregg,	Coal Centre.
Gilmore,	Atmyer & Molsberger,	Westmoreland,	W. Molsberger,	Webster.
Hilldale,	Hilldale Coal Company,	Washington,	J. N. McNorton,	Shire Oaks.
Hanlin,	Keystone Coal Company,	do.	S. S. Davidson,	Hanlin.
Hall,	John W. Hall & Son,	Fayette,	John W. Hall,	Fayette City.
Ivil,	James Jones,	Washington,	John H. Jones,	Monongahela City.
Ingram,	James Clark,	Greene,	James Clark,	Waynesburgh.
Iron City,	Phillips & Mittenzie,	Westmoreland,		Pittsburgh, S. S.
Jumbo,	Jumbo Coal and Coke Company,	Washington,	T. B. Robbins,	Midway.
Knob,	Knob Coal Company,	do.	S. H. Pearsol,	Brownsville, Fayette county.
Little Pittsburg,	R. E. Schrmertz & Co.,	Fayette,	John A. Bevan,	Belle Vernon.

Little Redstone,	James Rutherford,	do.	James Rutherford,	Fayette City.
Little Alps,	John Underwood,	do.	John Underwood,	California, Washington county.
Midway,	Robbins Block Coal Company,	Washington,	T. B. Robbins,	Midway.
Merchant,	David Boudler,	Fayette,	David Boudler,	Coal Centre, Washiugton county.
Nottingham,	Pittsburgh & Western Coal Co.,	Washington.		
New Eagle,	James H. Hopkins,	do.		
Nickel Plate,	J. D. Sautern,	do.	J. D. Sautern,	McDonald.
Primrose,	Robbins Block Coal Company,	do.	T. B. Robbins,	Midway.
Port Royal,	Port Royal Coal Company,	Westmoreland,	Frank R. Bradford,	Fitz Henry.
Peacock,	Jonas Crothers,	Washington,	Jonas Crothers,	Roscoe.
Rostraver,	William Schrader,	Westmoreland,	William Schrader,	Lock No. 4, Washington county.
Rea,	Bank of Commerce,	do.		Pittsburgh.
Rinehart,	Frank R. Rinehart,	Greene,	Frank R. Rinehart,	Waynesburgh.
Do.	Rinehart Bros.,	do.		do.
Slippery Rock,	Johnson & Leonard,	do.	J. D. Johnson,	do.
Stewart,	Clark & Stewart,	do.		do.
Stony Hill,	John N. Dixon,	Fayette,	John N. Dixon,	California, Washington county.
Snow Hill,	Alps Coal Company,	do.	Joseph Uuderwood,	Roscoe, Washington county.
Stockdale,	Crombie & Skillen,	Washington,	John Crombie,	Webster, Westmoreland county.
Tremont,	John A. Wood & Son,	Fayette,	S. B. Graham,	Belle Vernon.
Troytown,		do.		
Umpire,	C. L. Snowdou & Co.,	do.	John Simpson,	Brownsville.
Union Valley,	Henry Florsheim,	Washington,	M. G. Gibson,	Fuleyville.
Webster,	Thomas Faucett & Sons,	Westmoreland,	Thomas Carrick,	Webster.
West Newton,	West Newton Coal Company,	do.	A. W. Osborne,	West Newton.
Walnut Hill,		Washington.		
Waynesburgh,	Samuel Luce,	Greeue,	San uel Luco,	Waynesburgh.
Woods Run,	T. J. Wood,	Washington,	T. J. Wood,	Woods Run.

TABLE No. 2—Gives the total number of tons of coal mined and tons of coke produced in each colliery, number of days worked, number of employés, number of persons killed and injured, number of kegs of powder used, &c., in the First Bituminous Mining District, for the year ending December 31, 1887.

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Total production in tons of coke.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs of powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Number coke ovens.
Albany,	Fayette county,	40,591	....	40,450	176	118	...	2	318	1	5	...	...
American,	Washington county,	27,816	....	27,816	...	84	....	1	....	...	5	...	...
Allison,	do. do.	24,000	1,000	24,000	200	66	...	...	30	1	5	...	4
Abe Hays,	do. do.	17,504	....	17,504	137	59	...	2	...	...	5	...	...
Acme,	do. do.	33,000	....	33,000	200	63	....	....	....	....	3	....	....
Anderson,	do. do.	11,370	....	11,370	317	58	1	1	...	1	5	...	...
Bowman,	do. do.	8,000	....	7,500	...	28	...	...	...	1	2	...	...
Black Diamond,	do. do.	50,610	....	50,610	178	147	1	1	150	1	6	...	...
Black Diamond,	do. do.	3,000	....	3,000	75	82	...	1	12	1	3	...	...
Banner,	do. do.	68,320	....	91,100	207	214	...	...	...	...	9	...	...
Boon,	do. do.	18,813	....	18,000	190	59	....	....	50	...	3	....	....
Buffalo,	do. do.	60,000	....	60,000	200	109	...	...	100	...	7	...	...
Brier Hill,	do. do.	75,524	....	75,460	230	193	...	...	...	...	7	...	...
Catsburgh,	do. do.	40,850	....	40,850	226	112	1	2	...	...	8	...	...
Cliff,	do. do.	46,800	....	62,300	201	176	...	2	...	...	6	...	...
Cook,	do. do.	5,448	....	4,327	191	15	...	...	...	...	1	...	...
*Cedar Hill,	Fayette county,	3,076	....	3,076	25	46	...	1	...	...	4	...	...
Courtney,	Washington county,	29,252	....	29,252	160	104	...	2	...	...	5	...	...
Carondelet,	Fayette county,	17,708	....	17,708	120	87	...	...	...	...	5	...	...
Clipper,	Washington county,	39,798	....	39,798	181	105	...	...	240	...	8	...	...
Columbia,	Westmoreland county,	20,575	....	20,249	92	81	...	...	20	...	7	...	...
Climax,	Fayette county,	10,014	....	10,014	...	20	...	...	...	...	1	...	...
Champion,	Washington county,	33,000	....	33,000	125	104	....	....	....	....	5	....	....
Calidonia,	do. do.	56,500	....	56,500	140	138	...	2	500	...	7	...	...
Coal Bluff,	do. do.	53,576	....	53,576	158	158	...	...	...	...	8	...	...
Cincinnati,	do. do.	26,780	....	26,780	...	115	...	1	...	...	8	...	...
Enterprise,	do. do.	1,808	....	1,240	61	25	....	....	....	....	1	....	....
Eclipse,	do. do.	38,672	....	38,672	170	92	...	...	...	...	4	...	...
†Eclipse,	do. do.	.....	....	.....	...	120	...	2	...	...	8	...	...
Fayette City,	do. do.	1,447	....	1,447	36	61	....	....	....	....	2	....	....
Garfield,	Fayette county,	26,040	....	26,040	...	114	...	...	...	...	8	...	...
Gilmore,	Westmoreland county,	26,422	....	26,422	150	167	...	...	...	...	7	...	...

Globe,	Washington county,	34,500	....	34,500	143	87	...	...	...	...	5	...	...
Gastonville,	do. do.	50,838	....	50,838	240	105	...	...	...	...	4	...	...
Greenfield,	do. do.	.....	.....	.....	...	...	...	...	...	1	3	...	...
Hall,	Fayette county,	.....	.....	.....	...	79	...	...	...	1	6	...	...
Hilldale,	Washington county,	14,526	....	14,526	124	119	...	2	...	1	4	...	...
Ivil,	do. do.	50,389	....	50,389	240	123	1	4	150	3	5	...	...
Jumbo,	do. do.	120,000	3,200	148,200	240	287	...	2	180	8	14	...	16
Knob,	do. do.	34,820	....	34,820	136	104	...	1	200	2	7	...	...
Little Pittsburgh,	Fayette county,	5,109	172	.....	240	8	...	...	...	...	1	...	...
Little Redstone,	do. do.	4,440	....	4,440	150	16	...	...	48	...	1	...	...
*Midway,	Washington county,	.....	.....	.....	...	{ 84	...	4	...	...	...	...	...
						{ 91							
Merchant,	Fayette county,	1,509	....	1,509	150	4	...	...	...	...	1	...	...
†Nottingham,	Washington county,	.....	.....	.....	...	26	...	...	...	...	2	...	...
Nickel Plate,	.....	3,200	....	2,821	280	47	...	...	...	1	2	...	...
Primrose,	Washington county,	47,790	....	47,790	165	102	...	2	40	2	6	...	...
Port Royal,	Westmoreland county,	24,823	....	24,823	200	62	...	11	343	...	3	...	...
Rinehart,	Greene county,	532	....	532	70	5	...	...	6	...	...	...	...
Stockdale,	Washington county,	13,712	....	13,712	112	47	...	...	12	...	3	...	...
Stony Hill,	.....	11,000	....	11,000	200	60	...	1	...	...	4	...	...
Slippery Rock,	.....	2,683	....	2,683	...	9	...	...	...	...	...	...	...
Snow Hill,	.....	41,041	....	41,041	199	123	...	1	200	...	8	...	...
Tremout,	.....	8,132	....	8,132	180	74	...	...	...	...	6	...	...
Umpire,	.....	35,000	18,000	3,500	148	87	...	1	250	1	7	...	...
Union Valley,	.....	36,571	....	36,571	233	162	1	1	250	1	8	1	...
*Woods Run,	.....	2,743	....	2,743	60	30	...	1	25	...	2	...	...
West Newton,	.....	64,125	....	64,125	225	214	...	...	...	3	4	...	...
Webster,	.....	25,769	....	25,769	170	164	...	...	...	1	7	...	...
Total,	.....	1,549,061	21,472	1,559,625	7,874	5,218	6	41	3,425	28	295	1	20

* Changed hands, could not get coal production mined by former operator.

† Did not return circular.

TABLE No. 3.—Showing the number of each class of employés at each colliery in the First Bituminous mine district during the year 1887.

NAMES OF COLLIERIES.	LOCATION.	NUMBER OF PERSONS EMPLOYED INSIDE.							NUMBER OF PERSONS EMPLOYED OUTSIDE.							GRAND TOTALS—INSIDE AND OUTSIDE.
		Inside foreman or mine boss.	Miners.	Miners' laborers.	All company men.	Drivers.	Doorboys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All company men.	Superintendent, bookkeepers and clerks.	Total outside.	
Albany,	Fayette,	1	90	10	1	5	2	109	. . .	1	1	. . .	5	2	9	118
American,	Washington,	1	60	8	. . .	5	1	75	. . .	1	. . .	. . .	5	3	9	84
Allison,	do.	1	40	10	2	2	1	56	. . .	2	1	. . .	6	1	10	66
Abe Hays'	do.	1	40	4	3	5	2	55	. . .	. . .	. . .	. . .	3	1	4	59
Acme,	do.	1	45	6	. . .	3	. . .	56	. . .	1	. . .	. . .	3	3	7	63
Anderson,	do.	1	46	3	. . .	5	. . .	55	. . .	. . .	. . .	. . .	3	. . .	3	58
Bowman,	do.	1	20	3	. . .	2	. . .	26	. . .	. . .	1	. . .	. . .	1	2	28
Black Diamond,	do.	1	100	15	11	6	2	135	. . .	2	1	. . .	6	3	12	47
Black Diamond,	do.	1	63	8	. . .	3	1	76	. . .	1	1	. . .	2	2	6	82
Banner,	do.	1	180	7	. . .	9	. . .	197	. . .	2	. . .	. . .	12	3	17	214
Boon,	do.	1	50	. . .	1	3	. . .	55	. . .	1	2	. . .	. . .	1	4	59
Buffalo,	do.	1	80	5	1	7	2	96	. . .	1	3	. . .	7	2	13	109
Brier Hill,	do.	1	150	20	4	7	. . .	182	. . .	1	. . .	. . .	9	1	11	193
Catsburgh,	do.	1	90	. . .	2	8	. . .	101	. . .	. . .	1	. . .	7	3	11	112
Cliff,	do.	1	150	. . .	. . .	6	. . .	157	. . .	2	2	. . .	12	3	19	176
Cook,	do.	1	12	. . .	. . .	. . .	. . .	13	. . .	. . .	. . .	. . .	1	1	2	15
Cedar Hill,	Fayette,	1	35	3	. . .	3	. . .	42	. . .	. . .	. . .	. . .	4	. . .	4	46
Courtney,	Washington,	1	70	14	1	5	4	95	. . .	1	1	. . .	6	1	9	104
Carondelet,	Fayette,	1	63	9	5	5	. . .	83	. . .	. . .	. . .	. . .	4	. . .	4	87
Clipper,	Washington,	1	70	14	. . .	8	1	94	. . .	1	. . .	. . .	8	2	11	105
Columbia,	Westmoreland,	1	66	5	. . .	7	. . .	79	. . .	1	. . .	. . .	. . .	1	2	81
Climax,	Fayette,	1	27	. . .	. . .	1	. . .	29	. . .	. . .	1	. . .	. . .	. . .	1	30
Champion,	Washington,	1	80	10	.	5	1	97	. . .	1	. . .	. . .	5	1	7	104
Coal Bluff,	do.	1	115	15	3	8	4	146	. . .	2	1	. . .	6	3	12	158
Cincinnati,	do.	1	100	. . .	. . .	8	. . .	109	. . .	1	. . .	. . .	5	2	8	117
Caladonia,	do.	1	100	12	1	7	2	123	. . .	1	. . .	. . .	7	2	10	133
Eclipse,	do.	1	75	6	. . .	4	. . .	86	. . .	1	1	. . .	2	2	6	92
Eclipse,	do.	1	100	6	. . .	6	. . .	112	. . .	. . .	. . .	. . .	8	. . .	8	120
Enterprise,	do.	1	18	1	. . .	1	. . .	21	. . .	1	1	. . .	. . .	. . .	2	23

Fayette,	Fayette,	1	47	...	3	2	...	53	...	...	...	...	6	2	8	61
Gastonville,	Washington,	1	75	20	...	3	2	101	...	3	...	...	...	1	4	105
Garfield,	do.	1	99	...	...	8	...	108	...	1	1	...	4	...	6	114
Greenfield,	do.	1	65	1	1	2	...	70	...	1	1	...	6	...	7	77
Gilmore,	do.	1	120	12	11	7	...	151	...	1	...	...	12	3	16	167
Globe,	do.	1	65	4	...	5	3	78	...	...	...	...	...	...	9	87
Hilldale,	do.	1	90	10	...	4	1	106	...	1	1	...	10	1	13	119
Hall,	Fayette,	1	60	7	2	6	...	76	...	...	...	...	3	...	3	79
Ivil,	Washington,	1	100	7	1	5	1	115	...	1	1	...	5	1	8	123
Jumbo,	do.	1	200	40	5	14	5	265	...	4	5	...	10	3	22	287
Knob,	do.	1	70	5	6	7	2	91	...	2	2	...	7	2	13	104
Little Pittsburgh,	Fayette,	1	5	...	...	1	...	7	...	...	...	...	1	...	1	8
Little Redstone,	do.	1	8	2	2	1	...	14	...	...	...	...	2	...	2	16
Midway,	Washington,	1	70	6	6	7	...	90	...	1	1	...	2	...	4	94
Merchant,	Fayette,	...	...	...	...	...	...	4	...	...	...	...	...	...	...	4
Nottingham,	Washington,	1	20	2	...	2	...	25	...	...	...	...	2	...	2	27
Nickel Plate,	do.	1	43	2	1	2	...	49	...	1	1	...	6	...	8	57
Primrose,	do.	1	70	10	3	6	2	92	...	1	1	...	6	2	10	102
Port Royal,	do.	1	...	...	44	5	3	52	...	2	2	...	4	1	9	61
Rinehart,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
Stockdale,	Washingt on,	1	35	4	2	3	...	55	...	...	...	...	...	2	2	67
Slippery Rock,	Greene,	...	9	...	...	...	...	9	...	...	...	...	...	...	...	9
Stony Hill,	Fayette,	1	45	9	...	2	...	57	...	...	...	...	2	1	3	60
Snow Hill,	do.	1	86	17	1	3	...	113	...	1	1	...	6	2	10	123
Tremont,	do.	1	50	6	1	6	1	65	...	...	...	...	8	1	9	74
Umpire,	do.	1	70	...	3	7	...	81	...	1	1	...	3	1	6	87
Union Valley,	Washington.	1	125	15	1	8	2	152	...	1	1	...	5	3	10	162
Woods Run,	do.	1	20	...	...	2	1	24	...	1	...	...	2	1	4	28
West Newton,	Westmoreland,	1	175	10	2	8	4	200	...	1	3	...	7	3	14	214
Webster,	do.	1	180	12	4	7	...	154	...	2	1	...	5	2	10	164
Total,	...	56	3,097	394	123	282	50	4,782	...	49	39	...	260	76	436	5,21f

TABLE No. 4.—List of fatal accidents occuring in and about the mines of the First Bituminous mine district, for the year ended December 31, 1887.

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Widow.	No. of orphans.	Name of Colliery. Location—County.	Nature and cause of accident.
	John Curdy, ...	Miner, ...	. . .	W.	6	Buffalo, Washington county, ...	Died of injuries received December, 1886.
Jan. 27,	Hugh McLood, ...	do.	32	S.	. . .	Venitia, Washington county, ...	Killed by being crushed between cars.
Feb. 9,	Joseph Alikazzy, ...	do.	19	S.	. . .	Catsburgh, Washington county, ...	Killed by a fall of slate.
March 23,	George McHaley, ...	do.	18	S.	. . .	Black Diamond, Washington county, . .	Killed by being run over by cars.
May 21,	Samuel Tarrack, ...	Filler, ...	35	W.	. . .	Port Royal, Westmoreland county, . . .	Killed by falling slate.
June 30,	Lee Jones, ...	Miner, ...	25	S.	. . .	Ivil, Washington county, ...	Killed by falling slate.
Aug. 5,	John Gillgalon, ...	do.	29	W.	. . .	Union Valley, Washington county, . . .	Killed by falling coal.

TABLE No. 5.—List of Non-fatal Accidents occurring in and about the Mines of the First Bituminous Mine District, for the year ended December 31, 1887.

Date of accident.	Name of Person.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Jan. 21	Peter Ashurst,	Driver,				Allison,	Washington,	Injured slightly by coal cars.
25	James Carrington,	Miner,	22	S.		Ivil,	do.	Hand injured while turning slate.
27	Reuben Clutter,	do.	59	M.		do.	do.	Injured by a fall of slate.
28	William Olliver,	do.		M.		Midway,	do.	Burnt by an explosion of fire-damp.
	Eugene Wade,	do.				do.	do.	Burnt by an explosion of fire-damp.
	Thomas Neil,	do.				do.	do.	Burnt by an explosion of fire-damp.
Feb. 11	Daniel Ronsh,	Engineer,	50	M.		Ivil,	do.	Severely scalded by steam from a bursted boiler.
21	William Moore,	Miner,				Black Diamond,	do.	Thigh dislocated by a fall of roof coal.
14	Seymour Monchness,	do.				Abe Hays,	do.	Fell and a pick which he was carrying penetrated his left side making a serious wound.
14	Michael Pephie,	do.				do.	do.	Injured slightly by a fall of coal.
Mch. —	Thomas Nichols,	Driver,	24			Cincinnati,	do.	One rib broken and one fractured by coal cars.
21	H. F. Anders,	Miner,	53	M.		Venitia,	do.	Seriously injured by falling coal.
Apr. 12	M. Cassidy,	do.	45	M.		Wood's Run,	do.	Back hurt by falling slate.
14	William Fitch,	do.				American,	do.	Leg badly cut by falling coal.
22	William Satterfield,	do.	19	S.		Cedar Hill,	Fayette,	Foot injured by falling slate.
May 13	James Brady,	do.	28	S.		Cincinnati,	Washington,	Injured by a fall of slate.
	Henry Corran,	do.	19	S.		Eclipse,	do.	Thigh broken by a fall of slate.
16	Woods McCoy,	Driver,	21	S.		Umpire,	Fayette,	Arm broken by empty car.
	James Kain,	Day men,				Port Royal,	Westmoreland,	Slightly burnt by fire damp.
	Edward Kain,	do.				do.	do.	Slightly burnt by fire damp.
	Samuel Fletz,	Fire boss,				do.	do.	Slightly burnt by fire damp.
June 6	Daniel Harris,	Machine man,				do.	do.	Burnt by explosive gas.
	William Planton,	do.				do.	do.	Burnt by explosive gas.
21	John Hanna,	Miner,				Courtney,	Washington,	Two fingers of his left hand taken off by falling slate.
July 1	George Tillotson,	do.	15			Abe Hayes,	do.	Foot badly injured by being caught between coal cars necessitating amputation.
10	James Jones,	do.	16			Ivil,	do.	Leg broke by falling roof coal.
15	George Seeson,	Laborer,				Port Royal,	Westmoreland,	Burnt by fire damp while cleaning up a fall.
	Stephen Rabarton,	do.				do.	do.	Burnt by fire damp while cleaning up a fall.
	Andrew Kaliskey,	do.				do.	do.	Burnt by fire damp while cleaning up a fall.
	Jacob Jones,	do.				do.	do.	Burnt by fire damp while cleaning up a fall.
Sept. 5	Alexander Furguson,	Miner,				Cliff,	Washington,	Foot crushed by falling coal from a premature shot.
17	John Wylan,	Machine man,				Port Royal,	Westmoreland,	Hand hurt by mining machine.

TABLE No. 5.—List of Non-fatal Accidents—*Continued.*

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Sept. 18	Thomas Brownlee, . . .	Miner, ...	. . .	. . .	. . .	Stony Hill, ...	Fayette, ...	Three ribs broken by a fall of coal.
20	John Sampell, ...	Loader, ...	35	M.	. . .	Jumbo, ...	Washington, ...	Breast injured by falling slate.
Oct. 11	Jacob Ostemair, ...	Miner, ...	. . .	. . .	. . .	Ivil, ...	do.	Burned by fire damp.
14	Andrew Berner, ...	Laborer, ...	. . .	. . .	. . .	Port Royal, ...	Westmoreland, . .	Back injured by falling slate.
15	James Porter, ...	Driver, ...	. . .	. . .	. . .	Midway, ...	Washington, ...	Leg broken by coal cars leaving the track.
27	John O'Neil, ...	Miner, ...	. . .	. . .	. . .	Courtney, ...	do.	Leg broken by a fall of slate.
29	Alfred Kaining, ...	do.	. . .	. . .	. . .	Jumbo, ...	do. . .	Seriously hurt by a fall of slate.
Nov. 9	Walter Martin, ...	do.	. . .	. . .	. . .	Eclipse, ...	do.	Badly burnt by powder on hands and right arm.
21	James Fairley, ...	do.	. . .	. . .	. . .	Midway, ...	do.	Leg broken by a fall of slate.
Dec. 1	Louis Yonng, ...	do.	. . .	. . .	. . .	Calidonia, ...	do.	Head and right leg hurt by a fall of roof coal.

SECOND BITUMINOUS DISTRICT.

Hon. Thomas J. Stewart,

Secretary of Internal Affairs:

Sir:—In compliance with the tenth section of the act of Assembly, approved June 30, A. D. 1885, I have the honor to submit my third annual report, as inspector of mines in the Second bituminous district of Pennsylvania, for the year ending December 31, 1887.

There are seventy-seven mines in the district that come within the provisions of the law. It affords me great pleasure to state that they are all in a reasonably safe and healthful condition. With the introduction of improved mining machinery, and the employment of more intelligent men as managers, the condition of the mines is much better than it was a few years ago. There is scarcely a doubt that the laws passed for the elevation and improved safety of the mines have accomplished in great measure the ends at which they aim. I can heartily state that there has been almost universal willingness among the operators to carry out the requirements of the law.

Seventy-one accidents have occurred in the district during the year, twenty-five of them proving fatal. Last year the number of fatal accidents was ten, so that the increase has been 150 per cent. This is a sad showing, and I am constrained to say it results from causes for which the men are largely responsible.

The following statistics are a summary of accurate reports from all the mines:

Causes of Accidents.

Fatal—By falling slate,		8
By explosion of gas,		5
By falling coal,		4
By mine wagons,		4
By falling down shafts,		3
By cage,		1
Total,		25
Non-fatal—By falling slate,		14
By falling coal,		7
By falling roof,		2
By mine wagons,		16
By explosion of gas,		2
Miscellaneous,		5
Total,		46

Widows, caused by fatalities,	15
Orphans, caused by fatalities,	38

Mining Statistics.

Number of mines in district,	77
Number of mines in district operated,	70
Number of mines opened,	5
Number of mines abandoned,	4
Number of mines exhausted,	1
Number of persons employed in the mines,	7,058
Number of persons employed outside,	2,686
Total number of persons employed,	9,744
Tons of coal mined,	5,435,923½
Tons of coal shipped,	2,804,854
Tons of coke manufactured,	1,757,906¾
Average number of days worked,	224½
Tons of coal mined to each fatal accident,	217,437
Tons of coal mined to each non-fatal accident,	118,172
Number of employés to each fatal accident,	389 76/100
Number of employés to each non-fatal accident,	212
Number of mules in use,	888
Number of coke ovens operated,	5,331

A perusal of the foregoing statistics will show that the production of this year exceeds that of last by 363,492 tons. This is remarkable under the circumstances, for many parts of the district suffered from impediments. There was first, a long and stubborn strike in the coke region, throwing the works idle for weeks, and when once a return to work was accomplished, the scarcity of cars in which to transport the product largely curtailed the production. The output in the Irwin district is larger than ever it was before. This is owing, in great measure, to the excellent arrangement between the Westmoreland and Penn companies and their employés. This is an unwritten contract, and rests solely on the honor of both sides. It has proven prosperous, and the results of the past year make us hope that this mutual understanding will continue. Five mines in my district have produced more than 200,000 tons each, the Westmoreland shaft operated by the Westmoreland Coal Company, heading the list with 274,183 tons. The following pages will give a brief description of the mines, showing their condition and the improvements made within the year.

All of which is respectfully submitted.

WILLIAM JENKINS,
Inspector.

IRWIN, *February 20, 1888.*

Mines and Mine Improvements.

Alexandria.—This mine is in fair condition. At my last visit I measured 10,140 cubic feet of air, which was fairly circulated through the mine. Drainage moderate. Mine boss, Daniel Campbell.

Alice.—This mine is in fair condition. The volume of air passing out at the furnace showed 38,500 cubic feet per minute, which was well distributed. Drainage fair. Mining boss, James Eaton.

Alpsville.—This mine is nearly exhausted. Its condition was favorable at my last visit. Mining boss, William Ledger.

Amieville.—This mine is in a fair condition, the air-measurement showed 19,680 cubic feet. Well distributed. Drainage fair. Mining boss, William W. Carter.

Blythe.—March 18, 1887, I measured 20,400 cubic feet of air passing out over the furnace; and this volume steadily decreased, until the quantity became insufficient to supply the men properly. I notified the mining boss of the fact, and he assured me he would remedy the same at once. 141 persons are employed inside. Fire boss, John Dunlop; mining boss, H. D. Thomson.

On November 10, 1887, an explosion of fire-damp occurred in an old mine adjoining this one, and by it William Welsh, mining boss, and David Thomson lost their lives. A small map accompanied this report, showing the direction of the air current and location of the explosion.

Buckeye.—This mine has improved, and was in very fair condition at the time of my last visit, October 12, 1887. The quantity of air passing out measured 11,760 cubic feet per minute, and 5,040 cubic feet at the face of the headings. I showed the mine boss how he could improve this and get a better volume at the face of headings. The November report showed that he had attended to the matter and his volume was 8,039 cubic feet at the face of the headings. Drainage fair. Mining boss, James Allen.

Central.—This mine is in fair condition. A slope 270 feet long, (grade 1 in 5) has been put down this year. It is well timbered and laid with 35 lb. iron; 6,564 cubic feet of air in circulation. Drainage good. Mining-boss, J. C. Menoher.

Dilworth.—This is an old mine, reopened this year, on the B. & O. R. R in Westmoreland county, and operated by Sellers & Dilworth. The double-entry system will be used. A shaft 49 feet in area, and 63 feet deep has been sunk, and a stack placed on top 42 feet high for the purpose of ventilation. About 12,000 cubic feet of air is tolerably well circulated through the mine. Drainage good. Mining-boss, Ernest Debuission.

Duquesne.—This mine is in fair condition. At my last visit, I measured 16,320 cubic feet of air, which was fairly distributed through the mine; drainage moderate. Mining-boss, William Horner.

Emma.—This mine is in good condition. I measured 7,350 cubic

feet of air passing out per minute, and this was well distributed. Drainage good. Mining-boss, Adam Whitehead.

Eureka.—This mine is well taken care of. There was 8,400 cubic feet of air per minute conducted through the workings. Drainage good. Mining-boss, Orlando Flesher.

Frankstown.—This mine comes within the provisions of the law only in the winter season. When I was last there, December 19, 1887, one of the entries where the majority of the miners worked was poorly ventilated. Drainage fair. Mining-boss, Theodore Heilman.

Greensburg.—This mine is in good shape, the volume of air passing out per minute being 16,075 cubic feet, well-distributed through the workings. Drainage fair. Mining-boss, John McIntire.

Hampton.—In this mine, I measured 16,720 cubic feet of air passing out per minute. Drainage fair. Mining-boss, Edgar Thompson.

Hecla.—There is a very soft fire-clay bottom in this mine, causing it to heave a great deal. To avoid this they turn every other room in their butt headings until they get through into the next section, then start at the head of the entry and turn every room and bring all the coal back with them. This is a decided improvement over the old method. The quantity of air circulated per minute is 26,790 cubic feet. Drainage fair. Mining-boss, William Dean.

Hempfield.—This mine is in a favorable condition, with 16,566 cubic feet of air, thoroughly in circulation, except in entry No. 10, and the December report shows this to be rectified. Drainage fair. Mining-boss, Levi Ludwick.

Keystone Nos. 1 and 2.—These mines were closed the latter part of September. They were always in good condition, with 8,510 cubic feet of air. Mining-boss, William C. Garthy.

Manor Shaft.—The drainage and ventilation of this mine are favorable, with 9,240 cubic feet of air in circulation. Mining boss, Samuel Ferguson.

Manor Valley.—On November 1, 1887, when I visited this mine, there was 22,000 cubic feet of air per minute passed out over the furnace, but the air was not well conducted to the face of the headings. I notified the mine boss and the December report showed that he had promptly remedied the matter. Mining-boss, Joseph Weightman.

Mammoth Nos. 1 and 2.—These mines are in good condition. The fan is 25 feet in diameter, and when running at 24 revolutions per minute, produces a volume of 77,400 cubic feet of air. Mining-boss, Jacob Peffer.

Mutual Nos. 1, 2 and 3.—These mines are in fair condition. Air measurement at outlet showed 16,500 cubic feet; fairly distributed. Mining-boss, William M. Hart.

McClure and Company's Mines.—This company has ten mine

in the district, all in Westmoreland county. J. P. Brennan is general superintendent.

Bessemer and Rising Sun.—When I measured at Bessemer furnace, 27,440 cubic feet of air was passing out, but its distribution in the mine was poor. Rising Sun is ventilated by natural means, and the ventilation is not what it should be. The company will soon put down a shaft and erect a furnace, and then the mine will be all right. Mining-boss, John Narey.

Donnelly Nos. 1 and 2.—Mine No. 1 is in good condition, having a volume of 10,080 cubic feet of air passing out at the furnace, which is well distributed.

In mine No. 2 the ventilation is defective, the natural current on which it depends being good only at certain seasons of the year. Great improvement, however, is promised soon. Mining-boss, Andrew Neish.

Mayfield.—This mine is in good condition, with 8,680 cubic feet of air well distributed. Mining-boss, Andrew Neish.

Hazlett Nos. 1 and 2.—In mine No. 1 the ventilation is produced by natural means and was defective at the time of my last visit. In the dip workings, drainage good. Mining-boss, Jacob Welsh.

In mine No. 2 the ventilation was also defective. I suggested to the superintendent that he drive through into the Mullen mine and connect the ventilation with the furnace in that mine. He agreed to do this. At the inlet 8,160 cubic feet of air was measured. Mining-boss, J. J. Malloney.

Enterprise.—At the time of my last visit I measured 10,710 cubic feet of air going in at the inlet, but it was all lost before it got to the face of the headings. The air had too many outlets; I informed the superintendent of the matter, and he promised to have it attended to, and the December report showed the ventilation all right. Drainage good. Mining-boss, R. C. McElroy.

Mullin.—This mine is up to the requirements of the mining law, with 17,280 cubic feet of air in circulation. Drainage good. Mining-boss, Alexander Davenport.

Union.—This mine is well taken care of, with 4,141 cubic feet of air well circulated. Mining-boss, Thomas H. Jones.

New York and Cleveland Gas Coal Company has four mines in the Second district, and they are kept in very good condition generally. They have also made many improvements at some of the mines during the year.

Graver.—This mine ran only a short time during the year, and the coal from part of it is taken out through the Sandy Creek mine. At my last visit 12,150 cubic feet of air was passing out. Mining-boss, George Hill.

Oak Hill No. 4.—Some grading has been done in this mine during

the year, and the drainage much improved. At my last visit 25,200 cubic feet of air was fairly distributed through the mine. Mining-boss, William P. Owens.

Plum Creek.—The ventilation and drainage were fair at my last visit, there being a volume of 13,557 cubic feet of air in circulation. Mining-boss, John Owens.

Sandy Creek.—This mine is in good condition, there being 25,440 cubic feet of air in circulation the 14th of December, 1887. Mining-boss, Joseph Corbett.

Ocean.—This is a small drift opening, employing only eight persons, and in fair condition. Mining-boss, George Vogele.

Ocean No. 1.—This mine is generally kept in good order, but when I was last there the ventilation in heading No. 1 was defective, 28,025 cubic feet of air passed out over the furnace, and it was well distributed in the other parts of the mine. Drainage fair. Mining-boss, George J. Jewel.

Osceola.—The condition of this mine is very good, both as to ventilation and drainage. There was 20,260 cubic feet of air passing out over the furnace. Mining-boss, H. D. Penman.

Ohio and Pennsyvania.—This mine has been opened within the year. It is a shaft located on the Baltimore and Ohio railroad, in Westmoreland county, and operated by the Ohio and Pennsylvania Coal and Coke Company. The shaft is 200 feet deep, and the mine will be opened on the double-entry system. This mine evolves considerable fire-damp, but the volume of air is sufficient to keep it clear and in a healthful condition. A second opening is soon to be commenced. Mining-boss, John Matthews.

Penn Gas Coal Company.—The mines of this company are in excellent condition, and during the past year the output has been very large.

Shaft No. 1.—This mine is up the legal requirements in every respect. The last measurement showed a volume of 35,128 cubic feet of air in circulation, well distributed to the face of the headings. Drainage good. Important improvements are being made in this mine. Mining-boss, John Bolane.

Shaft No. 2.—This mine is also in good condition. A volume of 38,862 cubic feet of air is well circulated through the mine. The drainage is good and roads dry. A brick overcast has been built near the bottom of the shaft; this does away with the doors, and saves a good deal of leakage so near the bottom. Mining-boss, Michael Cauley.

Penn Gas No. 4.—This mine is in a fair condition. When last there I measured 24,900 cubic feet of air, which was fairly distributed throughout the mine. Drainage fair. Fire boss, Thomas Whiteman; mining-boss, Samuel Stone.

Coal Run.—This mine has done very little during the year. At

present only 6 persons are employed inside. Mining-boss, William Rodgers.

Port Royal.—There is considerable fire-damp generated in this mine. In my September visit I found they had cut through a clay vein in entries 9 and 10, and in several of the rooms, and gas was given off so freely that they had to resort to the use of the safety lamp. There was passing through the headings 12,420 cubic feet of air, and it seemed sufficient to render the gas harmless and carry it away as fast as generated. On October 22, I was notified that an explosion had taken place, by which William J. Jones lost his life. He and four others were working on the night shift and the disaster happened about 8 o'clock P. M. Christ Howells stated that at 4.20 P. M. the place was clear. After an examination of the mine by myself and the mine boss, John Simpson, we came to the conclusion that the door on the main entry had been left open by some one, from the fact that it had not been blown down. The effect of leaving this open was that the air passed directly to the upcast, instead of going about through the entries. On December 8, I found the mine in fair condition, with 19,293 cubic feet of air circulating in No. 9 and 10 entries, and very little gas. The company and officials are doing all in their power to prevent the recurrence of these disasters. A small map accompanying this will show the location of the explosion and direction of air current. Mining-boss, John Simpson.

Republic.—This mine is in very fair condition. The amount of air in circulation is 5,760 cubic feet per minute, fairly distributed. Drainage fair. Mining-boss, James W. Shields.

Shaner and Armstrong.—These mines are in fair condition. There is 11,400 cubic feet of air circulated through the mine. Drainage fair. Mining-boss, James Painter.

Shaner No. 2.—This is a new slope opening, located in Possum Hollow, near Guffey's station, on the Baltimore and Ohio railroad, and operated by the Shaner Gas Coal Company, Limited. The slope is 165 feet long, with 1 in 5 grade; the mine is opened on the double entry system; an air shaft 65 feet deep is sunk, and a stack 45 feet high surmounts it; a furnace will be built in the spring. The outside improvements are good and substantial. Drainage good. Mining-boss, William Callaghan.

Spring Hill Nos. 1 and 2.—Mine No. 1 will soon be worked out; it is in a fair condition.

Mine No. 2 is a new one, opened during the year on the double-entry system, which is a decided improvement over that used in the old mine; a shaft 16 feet deep has been sunk and a stack 28 feet high placed thereon. The outside improvements are extensive, and consist of a new tipple, incline plane 2,800 feet in length. Mining-boss, William S. Gibson.

South-West Coal and Coke Company.—This company has five mines

in the second district, and they are all very well managed. Morris Ramsay, superintendent.

No. 1. "A" and "B".—These mines are in excellent condition. A Guibal fan, 25 feet in diameter, has been erected at these mines, and supplies a sweeping current of air. The measurement at inlet of No. 1, "A," showed 68,880 cubic feet, which was well distributed in the workings. The measurement taken at the inlet of "B" showed 36,400 cubic feet of air well distributed throughout the mines. Drainage good. Mining-boss, William S. Ramsey.

A test of the fan at these mines was made, the result of which is appended.

Fan test made at the Morewood mines of the South-West Coal and Coke Company, Westmoreland county, Pa.: Size of fan, 25 feet diameter by 8 feet face, of the Guibal type and used as a blower. Size and style of engine, 20″ x 36″ cylinder, horizontal, and attached direct to fan shaft.

First split.	Second split.	Third split.	Area of each.	Cubic feet.	Water gauge.	Revolutions per minute.	High pressure of air current.	Indicated high pressure engine.	Per cent. of useful effect.
235	151	130	56	28,896	.10	10	.45	1.3	35
390	280	350	56	57,120	.20	20	1.80	3.7	49
445	355	390	56	66,640	.29	25	2.90	6.1	48
555	355	395	56	73,080	.40	30	4.6	9.7	47
660	520	500	56	94,080	.50	35	7.4	15	48
780	640	580	56	112,000	.70	40	12.3	24.9	49
940	730	700	56	132,720	.90	50	18.8	38.8	48
1,250	1,000	850	56	173,600	1.35	60	36.9	66.4	55
1,380	1,200	1,050	56	203,280	1.80	70	57.7	107.1	54
1,500	1,320	1,150	56	222,320	2.25	80	78.8	152.6	52
1,800	1,500	1,500	56	268,800	1.90	80	80.5	.....	.....

No. 2 and 3.—These mines are in good condition. Air measurement taken at the outlet showed 15,120 cubic feet per minute, well distributed through the mines. Drainage good. Mining-boss, William Kooser.

No 4.—This mine under the present mine-boss has improved decidedly during the last year. I measured 11,872 cubic feet of air passing out, and this was well distributed. Drainage good. Mining-boss, Robert Morris.

Standard.—This mine consists of a slope and two shaft openings, and is operated by the H. C. Frick Coke Company.

These are all in excellent condition. In No. 1 shaft the fire occured last year. The mine was sealed up in the latter part of November, 1886, and filled with water, fifty feet up the shaft, so it was kept until July 3, 1887, when it was re-opened and explored, gas was found, but no fire. We soon discovered how absurd the methods of Mr. Craig to extinguish the fire were, and how impossible it would have been for him to succeed. When last there I found 52,560 cubic feet of air in

circulation, and it was well distributed to the face of the headings. Mining-boss, George Dawson.

No. 2 Shaft.—This shaft is about a mile from the slope and connected therewith by two main headings, 2,381 feet of this distance was driven in 90 days, at an average speed of over 30 feet per day. On the shaft side the Harrison mining machine was used part of the time. It did the work more rapidly than by hand, but was more expensive. The mine is drained by two pumps. The December report showed 39,000 cubic feet of air in circulation. The development of this mine has been rapid, and the output is more than 1,500 tons per day. Mining-boss, John A. Hart.

United.—This mine is in excellent condition. The volume of air in circulation as shown by the anemometer was 59,000 cubic feet, and this volume was quite well distributed. Drainage good. There are many improvements made in the last year to be commended, for they add to the safety of the mine. Mining-boss, William West.

Weinman.—At the time of my last visit one entry in this mine was defective in ventilation. The mine-boss, Jacob Weinman, informed me this entry would be driven to daylight, and that, of course, will make the ventilation all right. Drainage good.

Waverly Nos. 1 and 2.—In mine No. 1 the air was defective at the time of my last visit, the volume at the face of the headings being insufficient. The only way out of the difficulty is to sink a shaft at the face of the workings and bring in fresh air. Drainage good. Mining-boss, George Moore.

No. 2 is in good condition, having 10,640 cubic feet of air in thorough circulation. Drainage good. Mining-boss, George Moore; assistant mining-boss, Thomas Parkins.

West Overton.—This mine is in fair condition. At my last visit the volume of air was 18,900 cubic feet, fairly distributed. Drainage good. Mining-boss, John Garnes.

Westmoreland Gas Coal Company.—The mines of this company are always in a splendid condition. The spirit of improvement is always rife, and at present extensive alterations are in progress at Larimer and the Westmoreland shaft, preparatory to the introduction of the endless rope system of hauling. F. Z. Schellenberg is the superintendent.

Larimer Nos. 3 and 4.—The surface at parts of this mine is light and its falling in has interfered somewhat with the ventilation. The mine boss occasionally forgets the furnace also, and that does not help matters much. There were 22,260 cubic feet of air circulating through the mine at my last visit. Mining-boss, Arthur Fowler.

North Side.—This has been abandoned for the present.

South Side.—This mine is in excellent condition, the ventilation being produced by fan and furnace. I measured 123,280 cubic feet

of air, which was well distributed to the face of the headings. The roads are dry, and drainage good. Mining-boss, James Thompson.

Westmoreland Shaft.—This mine is in first-class condition. There are 66,100 cubic feet of air in circulation, well distributed to the face of the entries. The roads are dry, and drainage good. Mining boss, Charles Walters.

The mine officials made a test of the fan at this mine and the results are given in the appended table :

Fan test—24′ by 10 fan at the Westmoreland Shaft. December 12th, 1887.

Fan speed, 66 revolutions; water gauge, 1.5 inches.

	Area of air-way.	Velocity of current.	Cubic feet of air passing.
1 Split, ...	81	1,015	82,215
2 Split, ...	60	1,404	84,060
3 Split, ...	60	1,703	102,180
4 Split, ...	60	2,475	148,500
Total, . . .	. . . . .	. . . . .	416,955

The number of horse powers required to overcome the drag of current was 98½.

This test was made by Mine Foreman Charles Walters and Alexander Wallace, machinist.

West Newton.—Extensive improvements have been made in this mine during the past year, a description of which will be given by Henry Loutit. Inspector of the First District. The ventilation and drainage of the mine are fair. The volume of air was 12,068 cubic feet, fairly distributed through the mine. Mining-boss, John Smith.

Yough Slope.—At my last visit this mine was in a favorable condition, there being 10,080 cubic feet of air distributed to all parts of the mine. Drainage fair. Mining-boss, James Latimore.

TABLE 1—Showing location of collieries in the Second Bituminous Mine District.

Name of Colliery.	Name of Operator.	Location—County.	Name of Superintendent.	Postoffice Address.
Alice,	J. M. Shoonmaker,	Westmoreland,	F. M. McClain,	Mt. Pleasant, Westmoreland county.
Alexandria,	Alexandria Coal Company,	do.	Thomas Donohoe,	Greensburg, Westmoreland county.
Aruold,	Arnold Coal Company,	do.		Burrell, Westmoreland county.
Armstrong,	Shaner Gas Coal Company (Limited),	do.	Alexander Moreland,	Yonghiogheny, Westmoreland county.
Amieville,	N. J. Bigley,	do.	S. H. Grace,	Suterville, Westmoreland county.
Alpsville,	Thomas Hackell & Co.,	Allegheny,	William Ledger,	Duncan, Allegheny county.
Blythe,	Youghiogheny and Ashtabula Coal Compauy,	Westmoreland,	John Blythe,	West Newton, Westmoreland county.
Bessemer,	McClure & Co.,	do.	James Divlen,	Mt. Pleasant, Westmoreland county.
Buckeye,	A. C. Cochran, executor,	do.	A. C. Cochran,	Stauffers, Westmoreland couuty.
Central,	Central Connellsville Coke Company,	do.	F. M. Reynolds,	Tarr's, Westmoraland county.
Carbon,	Carbon Coal Company,	do.	A. W. Jones,	Greensburg, Westmoreland connty.
Donnelly Nos. 1 and 2,	McClure & Co.,	do.	J. P. Brennan,	Scottdale, Westmoreland county.
Duquesne,	J. B. Corey,	Allegheny,	J. B. Corey,	Braddock, Allegheny county.
Emma,	Maria F. Overholt,	Westmoreland,	J. W. Overholt,	Scottdale, Westmoreland county.
Eureka,	Stoner & Co.,	do.	L. C. McLain,	Jacob's Creek, Westmoreland county.
Enterprise,	McClure & Co.,	do.	J. P. Brennan,	Scottdale, Westmoreland county.
Dilworth,	William P. Dilworth,	do.	Ernest Debuission,	Scott Haven, Westmoreland county.
Greensburg,	Greensburg Coal Company,	do.	A. W. Jones,	Greensburg, Westmoreland county.
Graver,	New York and Cleveland Gas Coal Company,	Allegheny,	William Fisher,	White Ash, Allegheny couuty.
Hecla,	Hecla Coke Company (Limited),	Westmoreland,	Thomas Laird,	South-west, Westmoreland county.
Hazlett Nos. 1 and 2,	McClure & Co.,	do.	J. P. Brennan,	Mt. Pleasant, Westmoreland county.
Hempfield,	Hempfield Coal Company,	do.	A. W. Jones,	Greensburg, Westmoreland couuty.
Hampton,	Hampton Coal Compauy,	Allegheny,	Major Lawton,	Wilkinsburg, Allegheny county.
Keystone Nos. 1 and 2,	William H. Brown & Sons,	do.	A. J. Shanks,	Port Perry, Allegheny county.
Frank-town,	Theodore Heilman,	do.	Theodore Heilman,	Wilkinsburg, Allegheny county.
Larimer Nos. 3 and 4,	Westmoreland Coal Company,	Westmoreland,	F. Z. Schellenberg,	Irwin, Westmoreland county.
Larimer Coke Works,	Carnegie Brothers & Co. (Limited),	do.	George Lauder,	Pittsburgh, Allegheny county.
Lucesco,	Leechburg Coal and Coke Company,	do.	W. H. Wray,	Leechburg, Armstrong county.
Mutual Nos. 1, 2 and 3,	M. M. & M. Co.,	do.	Robert S. Jamison,	Greensburg, Westmoreland county.
Manor Valley,	Manor Valley Gas Coal Compauy.	do.	W. A. Stauton,	Claridge, Westmoreland county.
Manor Shaft,	New York and Westmoreland Gas Coal and Coke Co.,	do.	H. F. Ludwick,	Manor, Westmoreland county.
Mullin,	McClure & Co.,	do.	William D. Mullin,	Mt. Pleasant, Westmoreland county.
Mammoth Nos. 1 and 2,	J. W. Moore,	do.	H. McCreary,	Mammoth, Westmoreland county.
Mayfield,	McClure & Co.,	do.	J. P. Brennan,	Scottdale, Westmoreland couuty.
No. 1 "A,"	The South-west Coal and Coke Company,	do.	Morris Ramsay,	Mt. Pleasant, Westmoreland county.
No. 1 "B,"	do. do. do.	do.	do.	do. do.
Nos. 2 and 3,	do. do. do.	do.	do.	do. do.
No. 4,	do. do. do.	do.	do.	do, do.
North Side,	Westmoreland Coal Company,	do.	F. Z. Schellenberg,	Irwin, Westmoreland county.
Ocean No. 1,	Youghiohony River Coal Company,	do.	John F. Hosack,	Scott Haven, Westmoreland county.
Ocean,	George Vogele,	Allegheny,	George Vogele,	Wilkinsburg, Allegheny county.
Osceola,	Osceola Coal Company,	do.	J. H. Dewees,	McKeesport, Allegheny county.
Oak Hill No. 4,	New York and Cleveland Gas Coal Company,	do.	John McIntosh,	Turtle Creek, Allegheny county.
Plum Creek,	do. do. do.	do.	T. B. DeArmit,	Negley. Allegheny couuty.
Penn Gas Coal Run.	Penn Gas Coal Company,	Westmoreland,	John F. Wolf,	Irwiu, Westmoreland county.
Peun Gas No. 1 Shaft,	do. do.	do.	do.	do. do.

TABLE NO. 1—*Continued.*

NAME OF COLLIERY.	Name of Operator.	Location—County.	Name of Superintenden.	Postoffice Address.
Penn Gas No. 2 Shaft,	Penn Gas Coal Company,	Westmoreland,	John F. Wolf,	Irwin, Westmoreland county.
Penn Gas No. 3 Shaft,	do. do.	do.	do.	do. do.
Penn Gas No. 4,	do. do.	do.	do.	do. do.
Penn Gas Slope,	do. do.	do.	do.	do. do.
Penn Gas Drift,	do. do.	do.	do.	do. do.
Port Royal,	Port Royal Coal and Coke Company,	do.	Frank R. Bradford,	Fitz Henry, Westmoreland county.
Pennsylvania and Ohio,	Ohio and Pennsylvania Coal Company,	do.	James Watkins,	do. do.
Pepublic,	Republic Coal Company,	do.	James W. Shields,	West Newton, Westmoreland county.
Rising Sun,	McClure & Co.,	do.	James Devlin,	Mt. Pleasant, Westmoreland county.
South Side,	Westmoreland Coal Company,	do.	F. Z. Schellenberg,	Irwin, Westmoreland county.
Standard No. 1 Shaft,	H. C. Frick Coal and Coke Company,	do.	J. C. Dysart,	Mt. Pleasant, Westmoreland county.
Standard Slope,	do. do. do.	do.	do.	do. do.
Standard No. 2 Shaft,	do. do. do.	do.	Robert Ramsay,	do. do.
Smithton No. 1,	Waverly Coal and Coke Company,	do.	N. E. Rhoades,	Smithton, Westmoreland county.
Smithtou No. 2,	do. do. do.	do.	do.	do. do.
Shaner No. 1,	Shauer Gas Coal Company (Limited),	do.	Alexander Moreland,	Yonghiogheny, Westmoreland county.
Shauer No. 2,	do. do. do.	do.	do.	do. do.
Sandy Creek,	New York and Cleveland Gas Coal Company,	Allegheny,	William Fisher,	White Ash, Allegheny county.
Spring Hill Nos. 1 and 2,	Spring Hill Coal Company,	do.	Eli Boyd,	Walls, Allegheny county.
Union,	McClure & Co.,	Westmoreland,	J. P. Brennan,	Scottdale, Westmoreland county.
United,	United Coal and Coke Company,	do.	F. M. Reynolds,	United, Westmoreland county.
Westmoreland Shaft,	Westmoreland Coal Company,	do.	F. Z. Schellenberg,	Irwin, Westmoreland county.
West Newton Shaft,	West Newtou Coal Company,	do.	A. W. Osborne,	West Newton, Westmoreland county.
West Overton,	A. C. Overholt & Co.,	do.	B. F. Overholt,	West Overton, Westmoreland county.
Weinman Nos. 1 and 2,	Weinman & Co.,	Allegheny,	Jacob Weinman,	Wilkinsburg, Allegheny county.
Yough Slope,	Yongh Slope Gas Coal Company,	Westmoreland,	Robert H. Latimore,	West Newton, Westmoreland county.

TABLE No. 2.—Gives the total number of tons of coal mined and tons of coke produced in each colliery, number of days worked, number of employés, number of persons killed and injured, number of kegs of powder used, etc., in the Second Bituminous Mining District for the year ending December 31, 1887.

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Total production in tons of coke.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs of powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Number coke ovens.
Alpsville,	Alpsville, Allegheny county,	12,000		12,000	295	33				1	3		25
Alexandria,	Crabtree, Westmoreland county,	138,483	45,597	70,088	293	301	1	2	10	2	27		293
Alice,	Mt. Pleasant, Westmoreland county,	105,000	70,000		226	227				2	17		250
Amieville,	Saterville, Westmoreland county,	36,497		37,000	168	143				1	13		
Buckeye,	Stauffers, Westmoreland county,	101,727½	65,916½		269	125			25	5	12		160
Bessemer and Rising Sun,	Mt. Pleasant, Westmoreland county,	193,247	92,859		217	218				3	29		273
Blythe,	Guffey, Westmoreland county,	60,000		60,000	130	142	2				7		
Central,	Tarr's, Westmoreland county,	62,860	43,498		230	174	1			8	15		204
Dilworth,	Scott Haven, Westmoreland county,	12,400		12,400	95	70			10		4		
Donnelly Nos. 1 and 2,	Stonerville, Westmoreland county,	106,000	81,000		240	152		1		1	13		199
Duquesne,	Wilkinsburg, Allegheny county,	20,000		19,500	150	135		1	4		10	1	
Emma,	Hoggs, Westmoreland county,	16,786	11,985		227	28				1	5		36
Eureka,	Jacob's Creek, Westmoreland county,	35,550		20,000	311	50					5		18
Enterprise,	Hawkeye, Westmoreland county,	26,000	18,000		221	33				1	5		51
Frankstown,	Frankstown, Allegheny county,	2,520				11							
Greensburg,	Greensburg, Westmoreland county,	115,254 35/100	5,009 40/100	107,740 25/100	235	131	1	9		1	15		10
Hecla,	South West, Westmoreland county,	155,642 81/2000	104,210 25/100		223	252				6	31		272
Hazlett Nos. 1 and 2,	Mt. Pleasant, Westmoreland county,	142,000	95,200		231	242				5	22		261
Hempfield,	Greensburg, Westmoreland county,	156,356.75		154,840 50/100	240	141	1	2		4	19		
Hampton,	Wilkinsburg, Allegheny county,	62,106		62,106	202	181	1				16	1	
Keystone Nos. 1 and 2,	Saltsburg, Allegheny county,	19,166		19,166	184	66	1			1	4		6
Larimer Nos. 3 and 4,	Larimer, Westmoreland county,	240,148		216,508	254½	321	3	1		1	22		
Larimer Coke Works,	Larimer, Westmoreland county,		106,896		300	110				3	14		30
Mammoth Nos. 1 and 2,	Mammoth Westmoreland county,	202,041	151,281	340	217	474				7	40		59
Manor Valley,	Claridge, Westmoreland county,	90,031¼		89,271¼	260	128			2	1	9		
Mutual Nos. 1, 2 and 3,	Mutual, Westmoreland county,	91,116	32,616	42,192	295	146	1		175	1	25		183
Manor shaft,	Manor Station, Westmoreland county,	19,000	800	18,500	210	77		2	15	4	6		45
Mullin,	Mt. Pleasant, Westmoreland county,	53,007	27,535		231	69				1	6		82
Mayfield,	Stonerville, Westmoreland county,	22,000	22,000		220	40				1	5		55
M. Graver,	White Ash, Allegheny county,	34,061		34,061	89	136					28	1	
No. 1 "A" and "B" Shafts,	Mt. Pleasant, Westmoreland coun'y,	300,160	196,173		230	448				14	46		470
Nos. 2 and 3,	Tarr's, Westmoreland county,	82,208	53,135		240	141				5	15		136

TABLE 2.—*Continued.*

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Total production in tons of coke.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs of powder used.	Number steam boilers.	Number horses and mules	Number mine locomotives.	Number coke ovens.
No. 4,	Stonerville, Westmoreland county,	40,138	25,578		240	63				4	8		72
Ocean No. 1,	Scott Haven, Westmoreland county,	125,229	4,857	125,229	250	177		1	100	2	10		29
Ohio and Pennsylvania,	Fitz Henry, Westmoreland county,	5,000	3,000	2,500	300	36	1			3	2		25
Osceola,	Osceola, Allegheny county,	78,000		48,000	240	174		3	50	1	8		
Ocean,	Wilkinsburg, Allegheny county,	5,273			305	9					1		
Oak Hill No. 4,	Turtle Creek, Allegheny county,	124,521		124,521	168¾	227	1				20		
Plum Creek,	Negley, Allegheny county,	110,352 1100/2000		110,352 1100/2000	166	150					23		
Port Royal,	Fitz Henry, Westmoreland county,	57,297¾	21,272⅓	25,389	200	83	1	1	343	8	8		60
Penn Gas Coal Run,	Irwin, Westmoreland county,	3,367		3,267	250	8					1		
Penn Gas No. 1,	Irwin, Westmoreland county,	194,965		194,965	250¾	305		4		4	34		
Penn Gas No. 2,	Irwin, Westmoreland county,	208,223		208,223	256¾	322		4		6	32		
Penn Gas No. 4,	Sewickley, Westmoreland county,	150,672		150,672	229¾	264	3			1	33		
Republic,	Sewickley, Westmoreland county,	23,153		23,153	240	60	1		20		6		
South Side,	Irwin, Westmoreland county,	211,462		191,462	253¾	270	2	2		2	18	1	
Standard Nos. 1 and 2,	Mt. Pleasant, Westmoreland county,	390,000	260,000		272	839	4	4		20	44		710
Smithton Nos. 1 and 2,	Smithton, Westmoreland county,	89,700	27,000	26,678	250	198			300	4	21		117
Shaner Nos. 1 and 2,	Shaner Station, Westmoreland county,	32,000		32,000	172	105			60	2	2		
Spring Hill Nos. 1 and 2,	Walls, Allegheny county,	33,000		33,000	270	54				1	4		
Sandy Creek,	Sandy Creek, Allegheny county,	112,549		112,549	190	201		1		1	42		
United,	United, Westmoreland county,	177,333	133,000		227	326				8	27		300
Union,	Stonerville, Westmoreland county,	32,000	21,000		210	57		1		1	7		70
West Overton,	West Overton, Westmoreland county,	54,940	38,458		217	90				2	7		110
West Newton,	West Newton, Westmoreland county,	128,251½		128,251½	225	215		4		6	8		
Westmoreland Shaft,	Biddle, Westmoreland county,	274,183		246,103	253⅓	394		2		12	22		
Westmoreland Car Shops,	Irwin, Westmoreland county,				254	50				1			
Weinman,	Wilkinsburg, Allegheny county,	7,099			298	12					1		
Yough Slope,	West Newton, Westmoreland county,	42,826		42,826	228	110		1		2	6		
Total,													

TABLE No. 3.—Showing the number of each class of employés at each colliery in the Second Bituminous Mine District during the year 1887.

Names Of Collieries.	Location—County.	Number of Persons Employed Inside.							Number of Persons Employed Outside.							Grand totals—Inside and outside.
		Inside foreman or mine boss.	Miners.	Miners' boys.	All company men.	Drivers and runners.	Deorboys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Cokers and yard men.	All company men.	Superintendent, bookkeepers and clerks.	Total outside.	
Alexandria,	Goff, Westmoreland,	1	161	9	6	19	7	203	1	8	3	60	24	2	98	301
Alpsville,	Alpsville, Allegheny,	1	25	...	1	3	...	30	...	....	1	.....	1	1	3	33
Amieville,	Suterville, Westmoreland,	1	105	15	...	8	2	131	...	3	1	.....	6	2	12	143
Alice,	Mt. Pleasant, Westmoreland,	1	120	11	3	16	8	159	...	3	2	56	4	3	68	227
Bessemer and Rising Sun,	Mt. Pleasant, Westmoreland,	1	80	...	10	14	5	110	...	3	3	100	...	2	108	218
Buckeye,	Stauffers, Westmoreland,	1	50	...	5	6	2	64	1	2	5	46	3	4	61	125
Blythe,	Guffey, Westmoreland,	1	110	10	2	6	2	131	...	2	1	.....	5	3	11	142
Central,	Tarr's, Westmoreland,	1	60	3	10	8	1	83	1	7	4	66	8	5	91	174
Dilworth,	Scott Haven, Westmoreland.	1	56	5	...	2	...	64	...	1	.....	.....	4	1	6	70
Duquesne,	Wilkinsburg, Allegheny,	1	80	25	12	7	3	128	...	2	4	.....	...	1	7	135
Donnelly Nos. 1 and 2,	Stonerville, Westmoreland,	1	68	...	9	11	2	91	...	2	1	53	1	4	61	152
Emma,	Hoggs, Westmoreland,	1	10	1	2	3	.	17	...	.....	1	8	...	2	11	28
Eureka,	Jacob's Creek, Westmoreland,	1	35	4	1	3	...	44	...	1	...	.....	3	2	6	50
Enterprise,	Hawkeye, Westmoreland,	1	14	...	1	3	1	20	...	1	...	11	1	....	13	33
Frankstown,	Frankstown, Allegheny,	1	10	...	...	...	...	11	...	.....	...	.....	...	.....	...	11
Greensburg,	Greensburg, Westmoreland,	1	97	2	2	11	4	117	...	2	2	2	7	1	14	131
Hempfield,	Greensburg, Westmoreland,	1	107	3	3	11	1	126	...	2	3	.....	9	1	15	141
Hecla,	South-West, Westmoreland,	1	92	3	15	17	12	140	1	5	4	74	25	3	112	252
Hampton,	Wilkinsburg, Allegheny,	1	130	20	3	12	3	169	...	3	1	.....	6	2	12	181
Hazlett Nos. 1 and 2,	Mt. Pleasant, Westmoreland,	2	96	2	12	16	4	132	1	2	4	89	12	2	110	242
Keystone Nos. 1 and 2,	Saltsburg, Allegheny,	1	42	9	4	4	1	61	...	.....	...	.....	4	1	5	66
Larimer Nos. 3 and 4,	Larimer, Westmoreland,	1	250	12	12	21	4	300	1	1	1	.....	15	3	21	321
Larimer Coke Works,	Larimer, Westmoreland,	...	...	...	...	...	...	...	...	2	2	61	42	3	110	110
Manor Valley,	Claridge, Westmoreland,	1	94	...	4	8	5	112	...	2	1	...	10	3	16	128
Mammoth Nos. 1 and 2,	Mammoth, Westmoreland,	1	187	13	7	24	12	244	1	4	7	207	3	3	230	474
Manor Shaft,	Manor Station, Westmoreland,	1	50	2	2	5	2	62	...	1	3	5	5	1	15	77
Mutual Nos. 1, 2 and 3,	Mutual, Westmoreland,	1	79	10	4	12	...	106	...	3	1	23	11	2	40	146
Mullin,	Mt. Pleasant, Westmoreland,	1	26	1	3	3	1	35	...	1	...	30	2	1	34	69
Mayfield,	Stonerville, Westmoreland,	...	16	...	1	3	1	21	...	.....	...	16	2	1	19	40

TABLE No. 3.—*Contiued.*

NAMES OF COLLIERIES.	LOCATION—COUNTY.	NUMBER OF PERSONS EMPLOYED INSIDE.							NUMBER OF PERSONS EMPLOYED OUTSIDE.							Grand totals—inside and outside.
		Inside foreman or mine boss.	Miners.	Miners' boys.	All company men.	Drivers and runners.	Doorboys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Coker and yard men.	All company men.	Superintendent, bookkeepers and clerks.	Total outside	
M. Graver,	White Ash, Allegheny,	1	86	12	2	15	1	117	. . .	1	2	. . . .	14	2	19	136
No. 1 "A" and "B,"	Mt. Pleasant, Westmoreland,	1	174	2	29	25	12	243	1	7	11	153	29	4	205	448
Nos. 2 and 3,	Tarr's, Westmoreland,	1	50	. . .	8	7	3	69	1	2	4	50	13	2	72	141
No. 4,	Stonerville, Westmoreland,	1	23	. . .	3	4	1	32	. . .	1	2	22	6	. . . .	31	63
Ocean No. 1,	Scott Haven, Westmoreland,	1	134	5	4	7	5	156	. . .	3	1	7	8	2	21	177
Ohio and Pennsylvania,	Fitz Henry, Westmoreland,	1	20	. . .	2	1	. . .	24	. . .	1	2	5	3	1	12	36
Oak Hill No. 4,	Turtle Creek, Allegheny,	1	132	40	4	16	2	195	. . .	6	2	. . . .	22	2	32	227
Osceola,	Osceola, Allegheny,	1	140	10	3	8	. . .	162	. . .	1	2	. . . .	6	3	12	174
Ocean,	Wilkinsburg, Allegheny,	1	7	. . .	. . .	1	. . .	9	. . .	. . .	. . .	. . .	. . .	. . .	. .	9
Plum Creek,	Negley, Allegheny,	1	105	11	8	13	. . .	138	. . .	3	. . .	. . . .	7	2	12	150
Port Royal,	Fitz Henry, Westmoreland,	1	. . .	. . .	45	5	3	54	. . .	2	3	18	4	2	29	83
Penn Gas Coal Run,	Irwin, Westmoreland,	1	4	. . .	1	. . .	. . .	6	1	. . .	. . .	. . . .	. . .	1	2	8
Penn Gas No. 1,	Irwin, Westmoreland,	1	200	29	13	29	8	280	. . .	4	3	. . . .	16	2	25	305
Penn Gas No. 2,	Irwin, Westmoreland,	1	225	23	12	25	7	293	1	4	3	. . . .	19	2	29	322
Penn Gas No. 4,	Sewickley, Westmoreland,	1	197	15	9	18	5	245	. . .	3	1	. . . .	14	1	19	264
Republic,	Sewickley, Westmoreland,	1	45	4	1	4	. . .	55	. . .	1	. . .	. . . .	3	1	5	60
Standard Nos. 1 and 2,	Mt. Pleasant, Westmoreland,	2	361	. . .	33	34	19	449	. .	15	13	352	5	5	390	839
South Side,	Irwin, Westmoreland,	1	200	15	16	16	4	252	1	2	2	. . .	10	3	18	270
Smithton Nos. 1 and 2,	Smithton, Westmoreland,	2	105	7	3	9	2	128	. . .	3	3	60	. . .	4	70	198
Shaner Nos. 1 and 2,	Shaner Station, Westmoreland,	1	68	. . .	25	3	. . .	97	. . .	1	1	. . . .	3	3	8	105
Spring Hill Nos. 1 and 2,	Walls, Allegheny,	1	40	. . .	. . .	6	. .	47	. . .	4	2	. . . .	. . .	1	7	54
Sandy Creek,	Sandy Creek, Allegheny,	1	131	25	2	15	1	175	. . .	8	2	. . . .	14	2	26	201
United,	United, Westmoreland,	1	142	. . .	10	17	11	181	. . .	4	3	124	12	2	145	326
Union,	Stonerville, Westmoreland,	1	21	. .	1	3	1	27	. . .	. . .	. . .	27	1	2	30	57
West Overton,	West Overton, Westmoreland,	1	30	6	2	5	. .	44	. . .	1	1	40	2	2	46	90
West Newton,	West Newton, Westmoreland,	1	175	10	3	8	4	201	. . .	1	3	. . . .	7	3	14	215
Westmoreland Shaft,	Biddle, Westmoreland,	1	250	18	58	26	6	359	1	3	5	. . . .	22	4	35	394
Westmoreland Car Shops,	Irwin, Westmoreland,	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1	14	1	. . . .	34	. . . .	50	50
Weinman,	Wilkinsburg, Allegheny,	1	9	. . .	. . .	1	. . .	10	. . .	. . .	. . .	. . . .	. . .	2	2	12
Yough Slope,	West Newton, Westmoreland,	1	80	8	4	6	. . .	99	. . .	1	3	. . . .	5	2	11	110
Total,		. . .	. . .	. . .	. . .	. .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .

TABLE No. 4.—List of fatal accidents occurring in and about the mines of the Second Bituminous Mine District, for the year ending December 31, 1887.

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Widow.	No. of orphans.	Name of Colliery. Location—County.	Nature and cause of accident.
Jan. 1,	Michael Dodds, ...	Mine-boss, ...	53	1	4	Keystone, Allegheny county, ...	Fatally injured by falling down an air-shaft, and died in three hours afterwards.
4,	William Camisow, ...	Miner, ...	17	. . .	. . .	Penn Gas No. 4, Westmoreland county, .	Instantly killed by a fall of slate. The boy and his father knew that the slate was loose.
18,	Matthew Kennally, ...	do.	70	1	. . .	South Side, do. .	Fatally injured by a fall of coal, and died in five days after the accident.
25,	James Steveuson, ...	do.	67	1	. . .	Oak Hill No. 4, Allegheny county, ...	Instantly killed by a fall of slate. The old man was very careless.
Feb. 14,	Joseph Chapman, ...	do.	35	1	3	Standard No. 2 Shaft, Westmoreland co.,	Fatally injured by carelessly crossing under the cage. He died on the 18th.
26,	William Donnelly, ...	Driver, ...	21	. . .	. . .	Larimer, do.	Fatally injured by a trip of wagous ruuuing wild. He did not have them properly spragged.
March 8,	George Gunther, ...	Miner, ...	56	1	5	Mutual, do.	Instantly killed by a fall of slate. He carelessly worked under the slate when he ought to have taken it down.
19,	William McGlone, ...	Boss trackman, ...	30	1	2	Standard No. 1 Shaft, do.	Fatally injured by an explosion of fire-damp on top of the shaft.
19,	N. W. McMasters, ...	Stable-boss, ...	39	1	1	Standard No. 1 Shaft, do.	Fatally injured by an explosion of fire-damp on top of the shaft. This is the mine where the firo was. It was sealed up tight, and neither of those two men had any business there at the time. They died the next day.
Dec. 14,	George Bagden, ...	Miner, ...	32	1	1	Staudard No. 2 Shaft, do.	Instantly killed by falling 303 feet into the shaft. He deliberately opened tho gate and walked in.
29,	Joseph Shaner, ...	do.	38	1	4	Penn Gas No. 4, do.	Seriously injured by a fall of coal and slate by carelessly walking in front of the coal after he had driven a wedge in it. Died ou January 4, 1888.
Mar. 29,'87,	Francis Rolands, ...	Engineer, ...	28	1	4	Ohio and Pennsylvauia, do.	Instantly killed by falling off a scaffold 12 feet high into the sump; thero was 4 feet of water iu the sump; ho and another man were fixing the pump at the time of the accident.

TABLE No. 4.—*Continued.*

Date of accident.	Name of Person.	Occupation.	Age.	Widow.	No. of orphans.	Name of Colliery. Location—County.	Nature and cause of accident.
March 21,	Adam McKee, ...	Miner, ...	19	. . .	. . .	Larimer, Westmoreland county, ...	Seriously injured by a fall of coal and slate. He died in fourteen weeks after the accident.
23,	Philip Butler, ...	Trapper boy, ...	13	. . .	. . .	do. do.	Fatally injured while asleep at his door by a trip of loaded wagons running over him. He died the same evening.
April 21,	Charles Engle, ...	Miner, ...	36	1	7	Greensburg, do.	Fatally injured by a fall of coal while wedging it down. Died on November 13.
June 23,	John Hoben, ...	do.	36	1	. . .	Hempfield, do.	Fatally injured by a fall of coal, and died in seven hours after the accident.
July 19,	James Smith, ...	do.	28	. . .	. . .	Alexandria, do.	Instantly killed by a fall of coal while he was undermining.
21,	Matthew Kennally, ...	do.	26	1	. . .	South Side, do.	Instantly killed by a fall of slate while he was drawing post in a pillar.
Sept. 23,	Joseph Anderson, ...	do.	40	. . .	. . .	Republic, do.	Instantly killed by a fall of slate while he was shoveling coal.
28,	John Johnson, ...	do.	25	. . .	. . .	Penn Gas No. 4, do.	Seriously injured by a fall of slate, and died on the 22d of October.
Oct. 17,	William Kane, ...	Driver, ...	23	. . .	. . .	Hampton, Allegheny county, ...	Instantly killed by being caught between wagon and rib.
22,	William Jenkins Jones, . . .	Miner, ...	28	. . .	. . .	Port Royal, Westmoreland county, . . .	Instantly killed by an explosion of fire-damp (carburetted hydrogen), some one carelessly leaving a door open, interrupting the air current and causing the gas to accumulate. Could not find out who this person was that left the door open.
Nov. 10,	William Welsh, ...	Mining-boss, ...	39	1	3	Blythe, do. . . .	Instantly killed by an explosion of fire-damp (carburetted hydrogen), caused by carelessly going into an old mine that had been standing idle for nearly twenty-one years.
10,	David Thomson, ...	Laborer, ...	21	. . .	. . .	do. do. . . .	Instantly killed by an explosion of fire-damp (carburetted hydrogen). He and Welsh were together, and they were the only two men working in the mine that day. They were taken out at six o'clock next morning.
14,	C. C. Bashion, ...	Miner, ...	40	1	4	Central, do. . . .	Instantly killed by a wagon becoming detached and running wild down the slope into the entry where he was at work.

TABLE No. 5 —List of non-fatal accidents occuring in and about the mines of the Second bituminous Mine District, for the year ended December 31, 1887.

Date of accident.	Name of Person.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Jan. 10,	Robert Marchall,	Miner,	29	M.		Yough Slope,	Westmoreland,	Leg broken by a fall of slate.
27,	John Landspurger,	Miner,	18	S		West Newton Shaft,	do.	Small bone of leg fractured by a fall of slate.
28,	Eral Ward,	Driver,	23	S.		Penn Shaft No. 1,	do.	Leg injured by a wagon.
29,	Andrew Hindman,	Driver,	57	M.		Yough Shaft,	do.	Hand injured between wagons.
31,	Charles Anderson,	Miner,	35	M.		Donnelly No. 1,	do.	Shoulder bone broken by a fall of roof coal.
Feb. 6,	William McWilliams,	Miner,	19	S.		Larimer,	do.	Leg broken by a fall of coal.
17,	William Gerard,	Miner,	54	M.		Alexandria,	do.	Was seriously injured by a fall of coal.
24,	John Miller,	Miner,	50	M.		South Side,	do.	Injured on body and limbs by a fall of coal.
Mar. 15,	William Holand,	Trapper,	15	S.		Standard Slope,	do.	Leg broken by falling at the top of slope.
23,	Griffith Harris,	Miner,	38	M.		Penn Shaft No. 1,	do.	Foot smashed by a fall of slate.
26,	Joseph Phrew,	Miner,	16	S.		Yough Shaft,	do.	Arm broken by falling on a rail.
29,	John Schrum,	Cager,	27	M.		Westmoreland Shaft	do.	Thumb taken off by a piece of coal falling down the shaft.
April 14,	William Campbell,	Miner,	34	M.		Westmoreland Shaft	do.	Leg broken by a fall of roof coal.
15,	Simon Forratt,	Driver,	31	M.		Standard No 1 Shaft	do.	Arm seriously injured by a runaway trip that it had to be amputated.
16,	George Hudock,	Miner,	28			West Newton Shaft,	do.	Back and leg injured by a fall of coal and slate.
20,	Patrick M. Kelly,	Miner,	35	M.		South Side,	do.	Seriously injured by a fall of slate.
25,	William Rain,	Driver,	19	S.		Yough Shaft,	do.	Ankle dislocated between a trip of wagons.
May 4,	Andrew Walt,	Miner,	35	M.		Greensburg,	do.	Eye put out by a splinter from a wedge.
11,	Joseph Christain,	Miner,	45	M.		Ocean No. 1,	do.	Slightly burned by an explosion of fire-damp by crossing over a fall.
16,	Henry Banris,	Miner,	38	M.		West Newton,	do.	Five ribs fractured by jumping on a trip of wagons.
June 2,	John Fughtner,	Driver,	17	S.		Hempfield,	do.	Leg broken, wrist dislocated and skull fractured by a runaway wagon.
8,	John Shields,	Tipple man,	46	S.		Osceola,	Allegheny,	Arm broken by falling off the tipple.
24,	John Martin,	Miner,	30	S.		Alexandria,	Westmoreland,	Leg broken by a wagon running back on him.
24,	Wm. P. Winings,	Driver,		M.		Greensburg,	do.	Leg bruised between wagons.
27,	Thomas Mitchell,	Miner,		M.		Greensburg,	do.	Head and shoulder cut and bruised by being caught between wagons.
30,	Michael Welsh,	Miner,	43	M.		Penn Shaft No. 1,	do.	Back injured by a fall of slate.
July 1,	Patrick Dougherty,	Miner,	65	M.		Duquense,	Allegheny,	Leg broken by a fall of slate.
Aug. 6,	Joseph Matula.	Miner,	44	M.		Port Royal,	Westmoreland,	Arm and leg broken by a fall of slate.
20,	Bernard Rooney,	Miner,	50	S.		Osceola,	Allegheny,	Bruised by a fall of slate.
Sept. 1,	Henry Heholt,	Miner,	40	M.		Osceola,	do.	Ankle sprained by a fall of slate.

TABLE No. 5.—Continued.

Date of accident.	Name of Person.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Sept. 6,	William Woodward, . . .	Miner, ...	26	S.	. . .	Greeusburg, . . .	Westmoreland, . . .	Hand badly bruised by a fall of coal.
16,	Thomas Hindmarch, . .	Miner, ...	21	S.	. . .	Greensburg, . . .	do. . . .	Leg sprained and rib broken by a fall of coal.
19,	Andrew Gorman, ...	Miner, ...	40	M.	. . .	Yough Shaft, ...	do. . . .	Ankle dislocated and body bruised by a fall of slate.
20,	George Grives, ...	Miner, ...	38	M.	. . .	Penn Shaft No. 1, .	do. . . .	Foot smashed, that it had to be amputated, by a fall of slate.
21,	William Howell, ...	Driver, ...	17	S.	.	Greensburg, ...	do. . . .	Ankle spraiued between wagou aud rib.
27,	Joseph Blackburn, . . .	Driver, ...	17	S.	. . .	Union, ...	do. . . .	Thumb taken off by falling iu front of a wagon, and the wheel passing over it.
Oct. 1,	George Thropca, ...	Miuer, ...	40	M.	. . .	Standard No. 1 Shaft	do. . . .	Leg broken by falling in front of wagon.
11,	Christain Marchbanks, .	Driver, ...	30	M.	. . .	West Newton, . . .	do. . . .	Arm injured by being kicked by a mule.
21,	Richard Princeler, . . .	Miner, ...	26	M.	. . .	Hempfield, ...	do. . . .	Leg broken between wagons by jumping on the trip with the driver.
Nov. 3,	Henry Taylor, ...	Miner, ...	30	M.	. . .	Manor Shaft, ...	do. . . .	Burued by an explosion of fire-damp in crossing over a fall.
—,	Joseph Connell, ...	Miner, ...	50	M.		Greensburg, ...	do. . . .	Ear nearly taken off by a fall of coal.
15,	John Kocher, ...	Miner, ...	30	M.	. . .	Standard No. 1 Shaft	do. . . .	Slightly injured by a fall of slate.
21,	William Morrisou, . . .	Driver, ...	22	S.	. . .	Mauor Shaft, ...	do. . . .	Collar bone broken by falling against a wagon.
17,	John Higgans, ...	Driver, ...	18	S.	. . .	Sandy Creek, ...	Allegheny, ...	Was seriously injured between wagon and rib.
Dec. 22,	Samuel Carnele, ...	Driver, ...	20	S.	. .	Greensburg, ...	Westmoreland, . . .	Hand injured by spragging a wagon.
31,	George Alms, ...	Miner, ...	61	M.	. . .	Greensburg, ...	do. . . .	Toe injured by a fall of slate.

THIRD BITUMINOUS DISTRICT.

To the Hon. THOMAS J. STEWART,

Secretary of Internal Affairs:

SIR:—I have the honor of submitting my report of the inspection of the miners of the Third bituminous coal district, for the year ending December 31, 1887.

I am pleased to report that no fatal accident occurred in this district during the year. An increase of one in the number of the non-fatal has been reported. The coal production, however, was increased during the year 22 per cent., and the production per accident shows an increase of at least $15\frac{3}{10}$ per cent. virtually, making a decrease in the number when compared with the coal tonnage. This is certainly a very gratifying showing, as it seldom happens in any other mining district of the State that no lives are sacrificed in a period of one year.

In one-half of the mines of this district the dangers for the workmen employed therein, to guard against, are not excessive, and they may be classed as practically safe mines, while in the other half the conditions are not so favorable to the miners, as the roof strata is of such a soft and dangerous nature that they are constantly required to exercise very good judgment in the use of timber, with which to secure it, to enable them to work with any degree of safety. While I have no idea that this favorable yearly record can be maintained in the future, as fatalities will have to be recorded so long as coal mining lasts, yet much depends upon the individual miner whether the number in the records will be few or many. The mine accidents are largely due to the imprudence of the persons injured and failure on their part to comply with the mine rules and to employ all necessary safeguards, known to them, for their own protection. Mine officials also can have an important bearing in keeping accidents down to the minimum if they will but perform their lawful duties faithfully, and see that the mine rules are complied with and that proper discipline is enforced and maintained among the workmen under their charge. I am afraid, however, that mine officials, especially in the past have been guilty of too many delinquences in this respect.

During my frequent official visits to each mine I have not failed to impress upon the workingmen the importance of carrying out the provisions of the mining act relating to them, and also of strictly

complying with the mine rules. I have tried to have them exercise a greater degree of prudence while at work. The mine bosses are also being constantly urged to take a greater interest in promoting the welfare of the workmen than they have in the past, which advice, no doubt, is having a very salutary effect.

CAUSE OF NON-FATAL ACCIDENTS.	1887.	1886.
By falls of roof,	3	7
By falls of coal,	7	7
By mine wagons,	4	2
By miseellaneous eauses,	5	2
Totals,	19	18
Inerease in 1887,	1	. . .

MINING STATISTICS—Employés.	1887.	1886.
Number of persons employed inside of mines, including mine-bosses,	3,865	3,493
Number of persons employed outside of mines,	521	457
Number of persons employed outside at coke ovens,	92	68
Totals,	4,478	4,018
Increase in 1887,	460	. . . .

TONNAGE, ETC.	1887.	1886.
Total coal production in tons,	2,138,738	1,751,986
Increase in 1887 in tons,	386,752	. . . . .
Number of tons of coal per non-fatal aecident,	112,302	97,333
Increase in tons in 1887,	14,969	. . . . .
Number of tons of eoke produced,	67,386	49,626
Increase in tons in 1887,	17,760	. . . . .
Number of days worked,	$10,228\frac{1}{2}$	$9,796\frac{1}{2}$
Inerease in 1887,	432	. . . . .
Average number of days worked at mines in operation at least six months during the year,	$225\frac{67}{100}$	$219\frac{64}{100}$
Average number of days worked at mines in operation less than six months during the year,	$109\frac{23}{100}$	$103\frac{57}{100}$

The number of mines in the district now in active operation is 54. For other statistical matter you are referred to the different tables accompanying this report.

Owing to the similarity in the openings, workings and in the methods employed in ventilating a large portion of the mines in this district, I have refrained from making a special report descriptive of the condition of each mine, but have in another part of the report made a few remarks having somewhat of a general application to nearly all of them. This has been done to avoid so much unnecessary repetition in the description of the mines when the condition of a large

portion of them was almost similar, consequently the descriptive part of this report is necessarily brief.

The sanitary condition of all the mines is about the same as in last year's report. As new territory is being developed all necessary improvements are made to keep the mines safe and in good condition.

The business done at the mines during the year has increased considerably over that of last year, as is shown by the above statistics. The coal tonnage would have been much greater had the operators been supplied with railroad cars adequate to the demands of their trade. Many of the operators had to give up valuable contracts owing to the lack of means of transporting their product to the market.

The prices paid the miners for mining were very generally advanced at the beginning of the year, and nothing since then of a serious nature has occurred to mar the harmonious relations existing between the mine operators and their employés. Only one ill-advised local strike, for an advance in miners' wages, took place at seven of the mines in Mercer county near the close of the present year, but at this date all are again in operation.

Yours very respectfully,

Thomas K. Adams,
Inspector of Third Bituminous District.

Mercer, Mercer county, Pa.,
February 1st, 1888.

Condition of Mines.

Twenty-three mines are located east of the Allegheny river, which have been fully described in previous reports, and it is only necessary for me to add that their sanitary condition remains very good. As the workings or excavations of the mines have become more extended during the year much care has been exercised by most of the mine officials in keeping up the improvements therein, thereby insuring proper drainage and an ample supply of air for ventilation.

The thirty mines situated in Butler, Beaver, Lawrence and Mercer counties and west of the Allegheny river, are about in the same condition as described in former reports. The ventilation is sufficient in all of them, and it only remains for the mine officials to attend to the proper distribution of it to the miners' working places.

In two mines, Keister and Karns, in Butler county, a healthy distribution of the air currents has been occasionally interrupted, owing to some of the entries and air passages becoming partially closed by squeeze or "creep." This will occur in nearly every instance in such mines where there are not sufficient pillars left to support the weight of the superincumbent strata. In all mines having a soft fire-clay floor, extra strong pillars should be left. For every

failure on the part of the mine officials to do this, much coal will be lost to the operator and in too many cases the miners will have to suffer by being required, at times, to work in an impure atmosphere.

The mines in this region are not as dry as those in the eastern division of this district. The mines, especially those in Mercer county, with but two exceptions, are shaft or slope openings made necessary by the seam of coal being below water level.

However, they are kept as well drained as it is practicable for the mine bosses to do.

New Mines and Improvements.

Three new mines—Keystone, Diamond and Monarch—were opened in Clarion county and one—Lackawanna No. 2,—in Mercer county, during the year. The three mines in Clarion county are drift openings and the coal seam to be worked is the "Lower Kittanning." Three substantial tipples and inclined planes have been constructed along with the other necessary structures in order to facilitate the rapid handling of the coal, so that a large "output" can be obtained with the least possible amount of labor.

At the Diamond mine the operators and manager have started away the inside workings in good shape. They have also sunk a good ventilating shaft, sixty-five feet in depth and seven feet in diameter with a stack on top twenty-eight feet high. A substantial ventilating furnace has been built which can produce from 35,000 to 40,000 cubic feet of air per minute with the conditions as they exist at present.

At the Keystone mine a small furnace has been built which is of sufficient capacity until the summer season approaches when it will certainly become necessary for another of larger size to be built.

Lackawannock No. 2, is the deepest shaft in the district. It was sunk to the "Sharon Block" coal which was found at a depth of 280 feet from the surface.

No accident occurred whatever while the work was progressing.

A section of the strata passed through in sinking the shaft accompanies this report.

Improvements.

An air shaft, 100 feet in depth and 6 feet × 8 feet in size was sunk at the Carver mine, Mercer county, which increased the volume of air in mine.

At Stoneboro No. 3 mine an air shaft was sunk and a fan twelve feet in diameter erected; a fan ten feet in diameter was also put in operation at the Cranberry mine, Mercer county. These two fans will produce sufficient ventilation and if the air courses are driven properly and taken care of, the miners will have pure air to work in for some time to come.

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TABLE No. 1.—Showing Location of Collieries in the Third Bituminous Mine District.

Name of Colliery.	Name of Operator.	Location—County.	Name of Superintendent.	Postoffice Address.
Acme,	Acme Mining Company,	Clarion,	C. N. Royce,	East Brady, Clarion county.
Acbarr,	Acbarr Mining Company,	Butler,	E. H. Bancroft,	Hilliards, Butler county.
Allegheny,	Allegheny Coal Company,	do.	D. H. Williams,	Grove City, Mercer county.
Beaver,	Beaver Coal and Coke Company,	Lawrence,	H. K. Hartsuff,	Rock Point P. O., Beaver county.
Black Diamond,	Filer, Sutliff & Co.,	Mercer,	Enoch Filer,	Sharon, Mercer county.
Bagdad,	Bagdad Coal Company,	Westmoreland,	Alfred Hicks,	Leechburg, Armstrong county.
Barnes,	Mercer Coal Company,	Butler,	J. T. Blair,	Greenville, Mercer county.
Baker,	Scott & Co.,	Beaver,	L. S. Hoyt,	Rock Point P. O., Beaver county.
Bethel,	Bethel Coal Company,	Mercer,	Thomas Bailey,	Wheeler P. O., Mercer county.
Carver,	Carver Coal Company,	do.	Frank Filer,	Stoneboro', Mercer county.
Chestnut Ridge,	Filer, Westerman & Co.,	do.	Enoch Filer,	Sharon, Mercer county.
Cranberry,	Sharon Coal Company (Limited),	do.	Morgan B. Hofius,	Grove City, Mercer county.
Chisholm,	Mercer Coal Company,	Butler.		
Caledonia,	Pittsburgh and Fairport Coal and Coke Company,	do.	James Crawford,	Euclid, Butler county.
Clinton,	Clinton Coal Company,	Lawrence,	Albert Harbison,	Rock Point P. O., Beaver county.
Diamond,	Thomas Mitchell & Sons,	Clarion,	Wilson S. Mitchell,	East Brady, Clarion county.
Fairmount No. 2,	Fairmount Coal and Iron Company,	do.	S. Taylor Sheaffer,	Fairmount City, Clarion county.
Fairmount No. 4,	do. do. do.	do.	do.	do. do.
Fairbanks,	Saltsburg Coal Company,	Westmoreland,	D. S. Robinson,	Saltsburg, Indiana county.
Glen,	J. R. Smith,	Armstrong,	J. R. Smith,	Manorville, Armstrong county.
Gosford,	Gosford Coal and Mining Company,	do.	W. W. Acheson,	Gosford, Armstrong county.
Gomersal,	Mahoning Valley Iron Company,	Butler,	William Ferguson,	Gomersal, Butler county.
Hardscrabble,	Brady's Bend Mining Company,	Clarion,	C. F. Hartwell,	South Oil City, Venango county.
Hickory Slope,	Hazzard, Wood & Co.,	Mercer.	Frank Hazzard,	Mercer, Mercer county.
International,	International Coal and Mining Company,	Armstrong,	Wesley Wilson,	Rimer, Armstrong county.
Jackson,	Jackson Coal Company,	Mercer,	William Graham,	Jackson Centre, Mercer county.
Keystone,	Keystone Coal and Mining Company,	Clarion,	George E. Henry,	East Brady, Clarion county.
Karus,	W. C. Mobley & Co ,	Butler,	W. C. Mobley,	Parker's Landing, Armstrong county.
Keystone,	Pittsburgh and Fairport Coal and Coke Company,	do.	do.	do. do.
Keister,	Union Coal and Coke Company,	do.	G. G. Stage,	Greenville, Mercer county.
Kittanning,	Kittanning Iron Company (Limited),	Armstrong,	Henry Colwell,	Kittanning, Armstrong county.
Lackawannock No. 1,	Pierce Coal Company (Limited),	Mercer,	Archy McIntyre,	Neshannock, Mercer county.
Lackawannock No. 2,	do. do. do.	do.	do.	do. do.
Leechburg No. 2,	Leechburg Coal and Coke Company,	Westmoreland,	D. B. Ashbaugh,	Ashburgh P. O., Westmoreland county.
Leechburg No. 3,	do. do. do.	do.	do.	do. do.
Mineral Ridge,	Mineral Ridge Coal Company,	Clarion,	C. W. H. Eiche,	West Monterey, Clarion county.
Monarch,	Monarch Coal Company,	do.	C. P. McCafferty,	East Brady, Clarion county.
New Catfish,	Pittsburgh Coal and Mining Company,	do.	C. C. Watt,	Pittsburgh, Lock box 434.
New Virginia,	Virginia Coal Company,	Mercer,	S. Perkins, Jr.,	Sharon, Mercer county.
Oak Ridge,	Oak Ridge Mining Company,	Armstrong,	J. C. Baker,	Oak Ridge Station, Armstrong county.
Ormsby Shaft,	Ormsby Coal Company (Limited),	Mercer,	Frank Hazzard,	Mercer, Mercer county.
Ormsby Slope,	L. M. Ormsby & Co. (Limited),	do.	L. M. Ormsby,	do. do.
Pittsb'gh and Kiskiminetas,	Pittsburgh and Kiskiminetas Coal and Coke Co.,	Westmoreland,	Alfred Hicks,	Leechburg, Armstrong county.
Penn,	Penn Coal Company (Limited),	Lawrence,	W. H. Marquis,	New Castle, Lawrence county.
Pine Run,	Stephenson & Mitchell,	Clarion,	Thomas Mitchell,	East Brady, Clarion county.
Pardoe,	Mercer Coal Company,	Mercer,	J. T. Blair,	Greenville, Mercer county.

TABLE No. 1.—*Continued.*

NAME OF COLLIERY.	Name of Operator.	Location—County.	Name of Superintendent.	Postoffice Address.
Riverview,	Riverview Coal and Mining Compnny,	Armstrong,	C. C. Watt,	Pittsburgh, Lock box 434.
Red Bank,	Alex. Reynold's Sons,	Clarion,	David Reynolds,	Red Bank, Clarion county.
State Line,	State Line Coal Company,	Beaver,	Hugh Laughlin,	East Palestine, Ohio.
Stoneboro' No. 2,	Mercer Iron and Coal Company,	Mercer,	Robert P. Cann,	Stoneboro, Mercer county.
Stoneboro' No. 3,	do. do. do.	do.	do.	do. do.
Star No. 2,	North Western Coal and Iron Company,	Clarion,	S. Taylor Sheaffer,	Fairmonnt City, Clarion county.
Spears,	Pine Grove Coal Company,	Mercer,	James Spears,	Grove City, Mercer county.

TABLE NO. 2—Gives the total number of tons of coal mined and tons of coke produced in each colliery, number of days worked, number of employés, number of persons killed and injured, number of kegs of powder used, &c., in the Third Bituminous Mining District for the year ending December 31, 1887.

NAMES OF COLLERIES.	Location.	Total production in tons of coal.	Total production in tons of coke.	Total shipment in tons of coal.	Number days worked.	Number persons employed	Number fatal accidents.	Number non-fatal accidents.	Number kegs of powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives	Number coke ovens.
Acme,	Rimersburg, Clarion county,	9,897	....	9,897	88½	51	...	...	....	...	3	...	...
Acbarr,	Hilliards, Butler county,	4,256	....	4,256	118	23	...	...	....	1	2	...	...
Allegheny,	Argentine P. O., Butler county,	25,759	....	25,759	174	52	...	...	....	2	6	...	...
Beaver,	Clinton, Beaver county,	57,764	13,513	57,764	240	146	...	...	275	1	12	...	60
Black Diamond,	Grove City, Mercer county,	41,104	....	41,104	136	65	...	...	325	4	4	...	...
Bagdad,	West Penn Railroad, Westmoreland county,	21,506	....	21,506	286	51	...	1	500	...	3	...	...
Barnes,	Harrisville, Butler county,	47,111	....	47,111	169	47	...	...	....	2	8	...	...
Baker,	Clinton, Beaver county,	47,607	....	47,207	203	103	...	...	....	...	7	...	...
Bethel,	Bethel, Mercer county,	15,420	....	15,420	148	72	...	...	238	4	2	...	...
Carver,	Stoneboro', Mercer county,	50,409	....	50,409	241	103	...	...	235	6	8	...	...
Chestuut Ridge,	Filer, Mercer county,	45,088	....	45,088	190	81	...	3	160	4	6	...	...
Cranberry,	Grove City, Mercer county,	39,255	....	37,924	235	95	...	...	75	2	7	...	...
Chisholm,	Branchton, Butler county,	25,866	....	25,866	116	36	...	...	53	...	3	...	...
Caledonia,	Euclid, Butler county,	8,392	....	8,392	147	25	...	...	25	...	1	...	...
Clinton,	Clinton, Beaver county,	32,570	....	32,570	191	75	...	...	100	...	6	...	...
Diamond,	Rimersburg, Clarion county,	33,227	....	33,227	225	63	...	...	60	...	2	...	...
Fairmount No. 2,	Fairmount City, Clarion county,	154,854	8,855	135,144	216	261	...	1	700	...	8	...	40
Fairmount No. 4,	do. do.	23,618	...	23,613	143	80	...	...	300	...	7	...	...
Fairbank,	Saltsburg, Indiana county,	150,000	....	150,000	300	178	...	...	....	...	11	1	...
Glen,	Kelley's Station, Armstrong county,	13,348	....	13,848	304	35	...	1	75	...	2	...	...
Gosford,	Gosford, Armstrong county,	27,947	....	27,947	235	62	...	...	...	...	4	...	...
Gomersal,	Gomersal, Butler county.	35,006	....	34,706	205	71	...	...	208	...	5	...	...
Hardscrabble,	East Brady, Clarion county,	*69,7.3	....	69,773	268	109	...	1	...	...	9	...	...
Hickory Slope,	Hazzard P. O., Mercer county,	47,910	....	43,910	217	91	...	...	275	2	4	...	...
International,	Rimer, Armstrong county,	6,286	....	6,286	110	32	...	...	....	...	3	...	...
Jackson,	Jackson Centre, Mercer county,	†5,000	....	5,000	100	15	...	...	....	...	2	...	...
Keystone,	Rimersburg, Clarion county,	10,492	....	10,492	115	49	...	...	....	...	3	...	...
Karns,	Karus City, Butler county,	†10,000	..	10,000	230	26	...	...	....	...	2	...	...
Keystone,	Roy P. O., Butler county,	2,160	100	1,000	36	65	...	...	30	1	3	...	50
Keister,	Coaltown, Butler county,	23,490	7,080	23,490	249	88	...	...	100	1	6	...	50
Kittauniug,	Kittanuing, Armstroug county,	38,402	21,814	.....	280	53	...	...	....	1	7	...	66
Lackawannock No. 1,	Greenfield, Mercer county,	23,171	....	23,171	165	92	...	...	243	6	4	...	...

TABLE NO. 2—*Continued.*

NAMES OF COLLERIES.	Location.	Total production in tons of coal.	Total production in tons of coke.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs of powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Number coke ovens
Leechburg No. 2,	Ashbaugh P. O., Westmoreland county,	26,491	....	22,076	256	42	...	...	.....	...	2	...	...
Leechburg No. 3,	do. do.	57,862	....	48,219	301	83	...	...	.....	1	4	...	...
Mineral Ridge,	West Monterey, Clarion county,	39,788	....	39,788	193	87	...	...	.....	...	8	...	...
New Catfish,	Catfish, Clariou county,	8,714	....	8,714	80	40	...	...	.....	...	2	...	...
New Virginia,	New Virginia, Mercer county,	14,900	....	14,900	154	77	...	1	19	3	4	...	...
Oak Ridge,	Oak Ridge Station, Armstrong county,	126,034	....	125,219	207	190	...	1	1,010	1	13	...	...
Ormsby Shaft,	Hazzard P. O., Mercer county,	33,335	....	31,862	184	59	...	...	.....	2	4	...	...
Ormsby Slope,	Jacksou Centre, Mercer conntyr	48,139	....	48,139	212	100	...	1	....	1	9	...	...
Pittsburgh and Kiskiminetas,	West Peun Railroad, Westmoreland county,	28,269	....	28,269	291	53	...	...	700	...	4	...	...
Peun,	New Castle, Lawrence county,	29,597	....	29,597	222	78	...	...	195	...	4	...	...
Pine Ruu,	East Brady, Clarion county,	68,863	....	68,863	241	117	...	...	.....	...	6	...	...
Pardoe,	Pardoe, Mercer county,	78,992	....	78,992	262	85	...	3	12	2	11	1	...
Riverview,	Red Bank, Clarion county,	19,542	....	19,542	154	44	...	...	.....	...	5	...	...
Red Bank,	do do.	40,145	9,036	20,822	240	148	...	...	175	2	7	...	42
State Line,	East Palestine, Ohio,	127,052	....	127,052	243	272	...	1	900	3	10	...	...
Stoneboro No. 2,	Stoneboro', Mercer county,	66,536	....	66,536	235	177	...	1	201	1	13	...	...
Stoneboro No. 3,	do. do.	20,402	....	20,402	194	76	...	1	77	2	4	...	...
Star No. 2,	New Bethlehem, Clarion conuty,	126,889	6,988	113,242	209	248	...	3	120	...	12	...	30
Spears,	Grove City, Mercer conuty,	30,000	....	30,000	220	58	...	...	200	3	3	...	...
Total,		2,138,738	67,886	2,024,119	10,228½	4,478	...	19	7,591	58	285	2	338

Number of mining-bosses employed not otherwise classed in this table, 50.

* Twelve and one-half per cent. was added to the reported production of this mine, as only "lump coal" was given in operator's report.

† Production of coal at both mines is approximated.

TABLE No. 3.—Showing the number of each class of employés at each colliery in the Third Bituminous Mine District during the year 1887.

Names of Collieries.	Location—County.	Number of Persons Employed Inside.							Number of Persons Employed Outside.							Grand totals—inside and outside.
		Inside foreman or mine boss.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Doorboys and helpers.	Total inside.	Outside foremen.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All company men.	Superintendent, bookkeepers and clerks.	Total outside.	
Acme,	Clarion,	1	44	. . .	1	3	. . .	49	. . .	1	. . .	. . . .	2	. . . .	3	52
Acbarr,	Butler,	. . .	15	. . .	1	2	. . .	18	. . .	. . . .	1	. . . .	3	1	5	23
Allegheny,	do.	1	35	. . .	3	4	. . .	43	. . .	1	2	. . . .	5	2	10	53
Beaver,	Lawrence,	1	96	. . .	3	8	. . .	108	. . .	1	1	. . . .	9	4	15	123
Black Diamond,	Mercer,	1	43	. . .	3	4	1	57	. . .	1	2	. . . .	4	2	9	66
Bagdad,	Westmoreland,	1	40	. . .	2	3	. . .	46	. . .	1	. . .	. . . .	3	2	6	52
Barnes,	Butler,	1	33	. . .	2	5	. . .	41	. . .	1	. . .	. . . .	5	1	7	48
Baker,	Beaver,	1	85	. . .	3	7	. . .	96	. . .	1	. . .	. . . .	5	2	8	104
Bethel,	Mercer,	1	54	. . .	6	2	. . .	63	. . .	1	2	. . . .	5	2	10	73
Carver,	do.	1	80	. . .	4	6	1	92	. . .	2	2	. . . .	5	3	12	104
Chestnut Ridge,	do.	1	60	. . .	4	6	1	72	. . .	1	2	. . . .	5	2	10	82
Cranberry,	do.	1	53	. . .	16	5	. . .	75	. . .	1	2	. . . .	16	2	21	96
Chisholm,	Butler,	1	25	. . .	3	3	. . .	32	. . .	. . . .	. . .	. . . .	4	1	5	37
Caledonia,	do.	1	18	. . .	5	1	. . .	25	. . .	. . . .	. . .	. . . .	. . .	1	1	26
Clinton,	Lawrence,	1	60	. . .	2	6	. . .	69	. . .	1	. . .	. . . .	4	2	7	76
Diamond,	Clarion,	1	52	. . .	2	2	. . .	57	. . .	1	. . .	. . . .	5	1	7	64
Fairmount No. 2,	do.	1	205	. . .	3	11	4	224	. . .	2	2	. . . .	11	3	18	242
Fairmount No. 4,	do.	1	65	. . .	2	7	2	77	. . .	2	. . .	. . . .	2	. . . .	4	81
Fairbank,	Westmoreland,	1	122	. . .	18	9	4	154	. . .	2	2	. . . .	18	3	25	179
Glen,	Armstrong,	1	23	. . .	. . .	3	. . .	32	. . .	. . . .	. . .	. . . .	2	2	4	36
Gosford,	do.	1	43	. . .	2	5	3	54	. . .	1	2	. . . .	4	2	9	63
Gomersal,	Butler,	1	52	. . .	4	4	2	63	. . .	1	. . .	. . . .	7	1	9	72
Hardscrabble,	Clarion,	1	86	. . .	3	8	. . .	98	. . .	1	. . .	. . . .	9	2	12	110
Hickory Slope,	Mercer,	1	71	. . .	3	4	. . .	79	. . .	2	2	. . . .	6	3	13	92
International,	Armstrong,	1	23	. . .	1	1	. . .	26	. . .	2	. . .	. . . .	3	2	7	33
Jackson,	Mercer,	1	12	. . .	. . .	2	. . .	15	. . .	. . . .	. . .	. . . .	1	. . . .	1	16
Keystone,	Clarion,	1	42	. . .	1	2	. . .	46	. . .	1	. .	. . . .	2	1	4	50
Karns,	Butler,	1	18	. . .	2	3	. . .	24	. . .	. . . .	. . .	. . . .	2	1	3	27
Keystone,	do.	1	41	. . .	2	3	. . .	47	. . .	1	2	. . . .	5	2	10	57

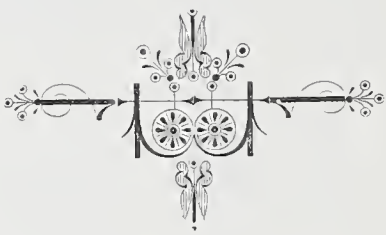
TABLE No. 3.—*Continued.*

NAMES OF COLLIERIES.	LOCATION—COUNTY.	NUMBER OF PERSONS EMPLOYED INSIDE.							NUMBER OF PERSONS EMPLOYED OUTSIDE.							GRAND TOTALS—INSIDE AND OUTSIDE.
		Inside foreman or mine boss.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Doorboys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All company men.	Superintendent, bookkeepers and clerks.	Total outside.	
Keister,	Butler,	1	50	. . .	10	5	2	68	. .	1	. . .	. . . .	10	3	14	82
Kittanning,	Armstrong,	1	37	. . .	1	3	. . .	42	. . .	. . . .	1	. . . .	4	. . . .	5	47
Lackawannock No. 1,	Mercer,	1	65	. . .	3	4	1	74	. . .	1	4	. . . .	13	1	19	93
Lackawannock No. 2,	do.	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . . .	. . .	. . .	. . .	. . .
Leechburg No. 2,	Westmoreland,	1	35	. . .	1	2	. . .	39	. . .	1	. . .	. . . .	2	1	4	43
Leechburg No. 3,	do.	1	70	. . .	3	4	. . .	78	. . .	1	. . .	. . . .	3	2	6	84
Mineral Ridge,	Clarion,	1	70	. . .	3	4	. . .	78	. .	2	. . .	. . . .	7	1	10	88
Monarch,	do.	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . . .	. . .	. . .	. . .	. . .
New Catfish,	do.	1	32	. . .	1	2	. . .	36	. . .	. . .	. . .	. . . .	3	2	5	41
New Virginia,	Mercer,	1	57	. . .	5	4	. . .	67	. . .	1	2	. . . .	4	4	11	78
Oak Ridge,	Armstrong,	1	148	. . .	4	11	9	173	. . .	4	1	. . . .	11	2	18	191
Ormsby Shaft,	Mercer,	1	45	. . .	3	3	. . .	52	. . .	1	2	. . . .	3	2	8	60
Ormsby Slope,	do.	1	75	. . .	3	7	4	90	. . .	1	2	. . . .	7	1	11	101
Pittsburgh and Kiskiminetas,	Westmoreland,	1	42	. . .	2	3	. . .	48	. . .	1	. . .	. . . .	3	2	6	54
Penn,	Lawrence,	1	54	. . .	12	4	. . .	71	. . .	1	. . .	. . . .	5	2	8	79
Pine Run,	Clarion,	1	95	. . .	5	5	2	108	. . .	1	1	. . . .	5	3	10	118
Pardoe,	Mercer,	1	56	. . .	5	10	2	74	. . .	2	4	. . . .	4	2	12	86
Riverview,	Armstrong,	1	31	. . .	2	3	. . .	37	. . .	1	. . .	. . . .	5	2	8	45
Red Bank,	Clarion,	1	80	. . .	9	6	3	99	. . .	4	2	. . . .	24	4	34	133
State Line,	Beaver,	1	210	. . .	30	14	11	266	. . .	2	4	. . . .	. . .	1	7	273
Stoneboro' No. 2,	Mercer,	1	123	. . .	14	12	6	156	. . .	3	1	. . . .	16	2	22	178
Stoneboro' No. 3,	do.	1	48	. . .	10	5	2	66	. . .	2	2	. . . .	5	2	11	77
Star No. 2,	Clarion,	1	194	. . .	3	10	4	212	. . .	4	3	. . . .	18	2	27	239
Spears,	Mercer,	1	44	. .	1	3	. . .	49	. . .	1	2	. . . .	5	2	10	59
Total,		50	3,267	. . .	281	253	64	3,815	. . .	64	55	. . . .	309	93	613	4,478

Number of outside employees employed at coke ovens not otherwise classed in this table, 92.

TABLE No. 5.—List of non-fatal accidents occurring in and about the mines of the Third Bituminous Mine District, for the year ended December 31, 1887.

Date of accident.	Name of Person.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location—County.	Nature and cause of accident.
Feb. 3,	William Troutner, . . .	Miner, ...	45	Yes,	. . .	Oak Ridge, ...	Armstrong, ...	Leg broken by fall of coal.
14,	George Turner, ...	Roadman, ...	45	Yes,	. . .	Stoneboro' No. 3, .	Mercer, ...	Injured by a set of timbers falling upon him while repairing a heading.
21,	Richard Blake, ...	Driver, ...	26	Yes,	. .	New Virginia, . . .	do.	Injured by mine wagons.
24,	Oscar Johnsou, ...	Miner, ...	40	Yes,	. . .	Stoneboro' No. 2, .	do.	Leg hurt by fall of coal.
Mar. 19,	Joseph Englet, ...	do.	29	Yes,	. . .	Hardscrabble, . . .	Clarion, ...	Severely injured by a fall of coal.
Apr. 5,	William Simmons, . . .	do.	20	No,	. . .	Star No. 2, ...	do.	Burned by igniting powder.
June 7,	James Garduer, ...	do.	34	Yes,	. . .	Ormsby Slope, . .	Mercer, ...	Head and ear injured by a fall of coal.
8,	George Traver, ...	Driver, ...	35	Yes,	. . .	Pardoe, ...	do.	Arm injured by mine wagons.
July 9,	John Brown, ...	do.	35	Yes,	. .	do.	do.	Injured by mine wagons.
15,	Samuel Weakley, ...	Roadman, ...	54	Yes,	. . .	do.	do.	Hurt by falling through a trestle.
25,	Edward Close, ...	Miner, ...	17	No,	. . .	State Line, ...	Beaver, ...	Head injured by fall of roof slate.
May 7,	Samuel Johnson, ...	Tanker, ...	21	No,	. . .	Chestnut Ridge, . .	Mercer, ...	Had three ribs broken by mine cage.
Oct. 1,	Wm. M. Kliuginsmith, .	Miner, ...	35	Yes,	. . .	Glen, ...	Armstrong, ...	Shoulders injured by fall of coal.
17,	William Shay, ...	do.	. . .	Yes,	. . .	Star No. 2, ...	Clarion, ...	Injured by fall of roof slate.
27,	John Waters, ...	do.	47	Yes,	. . .	Bagdad, ...	Westmoreland, . .	Leg broken by fall of roof slate.
31,	David Young, ...	do.	30	Yes,	. . .	Fairmount No. 2, .	Clarion, ...	Collar bone broken by fall of coal.
Nov. 1,	James Dunkerley, ...	Tanker, ...	20	No,	. . .	Chestnut Ridge, . .	Mercer, ...	Had an arm broken by the safety-gate rods becoming detached and falling down the shaft.
5,	James Bigley, ...	Miner, ...	. . .	Yes,	. . .	Star No. 2, ...	Clarion, ...	Leg broken by fall of coal.
Dec. 9,	George Tunstall, ...	Driver, ...	16	No,	. . .	Chestnut Ridge, . .	Mercer, ...	Injured by mine wagons.



FOURTH BITUMINOUS DISTRICT.

Hon. Thomas J. Stewart,

Secretary of Internal Affairs, Harrisburg, Pa.:

Sir:—In compliance with section ten of an act of Assembly approved June 30, 1885, I have the honor herewith to submit my annual report on the condition of the mines comprising the Fourth bituminous district of Pennsylvania for the year ending December 31, 1887. The said report contains the usual tables showing amount of coal produced and production of coke; also number of ovens, number of employés inside and outside, together with number of fatal and non-fatal accidents, with a brief account of each accident; also a brief general description of the condition of the mines, together with the improvements made during the year, and such information as was deemed to be suitable to those who may be interested either as miners or operators. The following table will give a synopsis of the report:

Total number of mines in district,	68
Number of mines shipping coal,	62
Total production in tons,	4,173,909
Total shipment in tons,	3,684,663
Total production of coke in tons,	399,346
Total number of persons employed inside,	6,441
Total number of persons employed outside,	1,069
Total number employed inside and outside,	7,510
Number of fatal accidents,	13
Number of non-fatal accidents,	29
Number of tons per fatal accident,	321,070
Number of tons per non-fatal accident,	143,927
Average number of days worked during the year,	256
Number of coke ovens in district,	1,838

Accompanying this report will be found a number of photographic views of Walston mines, Jefferson county, kindly furnished by Messrs. Haskell and McLeary, general manager and assistant general manager, respectively, of the Rochester and Pittsburgh Iron and Coal Company. The report is respectfully submitted.

Yours very respectfully,

Roger Hampson.

Towanda, February 24, 1888.

General Description.

There are only two mines in the Barclay region, namely, Barclay and Long Valley, and the former work is mostly confined to working out pillars and patches of coal lying between the faults, and, considering the disadvantages to be met with, the Barclay mines are, and have been, in a fair condition during the year. The Long Valley company have opened up some new territory, and are now making an effort to drive a heading to the outside on the south side of the field, so as to serve a drain for the lower part of the workings. The ventilation of the mine was fair, and work has been fair during the year.

The mines in Tioga county have worked very well during the year, and their condition has been well maintained, also the drainage. The Fall Brook company have reduced the number of their mines, and the No. 2 mine is nearly finished, and the new No. 5 mine has not turned out as well as was expected, as the coal seam gets thin, going north and south. Morris Run mines have run very well, and a large number of men are employed, the ventilation and drainage having been good during the year, and everything well managed. The fan at the slope does its work well, and the two furnaces in Salt Lake mine also do their work well.

The mines at "*Arnot*" have worked fairly well during the year, and a large number of men are employed. The ventilation and drainage have been good, and the same remarks will also apply to the "*Fall Brook*" Coal Co's. mines, three in number, at Antrim, where everything is kept up to a first-class standard in every respect, everything being done to keep the mines in good order, and the latest improvements are introduced by its capable superintendent and assistants.

Little need be said of the *Gaines* mines, as only a few miners are at work there, yet everything is in very good condition, and ventilation and drainage very good.

The mines at St. Mary's, namely, St. Mary's 1, 2 and 3, Tannerdale, and Cascade, 1 and 2, have worked very well during the year, and the ventilation and drainage of the above mines has been very good indeed, and the welfare of the men well looked after. The mines of the North-Western Mining and Exchange Company, at Dagus, have all been kept in a very good and healthy condition. Some of the mines have been worked out and the pillars taken out, and others opened, so that their production has been fully maintained.

The Eureka Slope mine was in fairly good condition at the beginning of the year, and toward the latter part of the year was in very good condition.

The *Clarion* mines, five in number, have worked very well during the year, and the ventilation of No. 1 was very good. No. 3 was not not so good as regards ventilation and drainage, as the workings all went to the dip, the tops also not very good, but now connection has been made with No. 1, and the mine will be in better condition here-

Coke Ovens. Walston.

after. Three new mines were started one mile north of No. 1 mine, and were all in very good condition throughout.

Beach Tree mine No. 2 has worked very well during the year, and the ventilation of the mine on the east side has been very good all the year, and all the headings on the west side, with the exception of 10 and 11, which are in advance of the others. The ventilation of the new mine was fair, as only a few miners have been employed so far.

Coal Glen mine has been kept in good condition all the year, the ventilation and drainage having been well looked after.

The mines at Reynoldsville, operated by the Bell, Lewis & Yates Coal Mining Company, and named the Hamiliton, Soldier Run, 1 and 2, and the Sprague mines have worked fairly well.

The Hamilton mine is confined wholly to pillar work, and as the openings at the far side of the workings have been closed, it has been difficult to ventilate it properly, as no proper air-ways had been left when the mine was first opened, still the mine has been kept in a good condition.

Soldier Run mine No. 1 has not been in first class order, as the mine was badly cut up, the rooms driven up too far, and the furnace located too far from the working face to be of very much good. The new No. 2 mine has cut off most of the old work, and headings are being driven to cut off more, and the ventilation of the new mine was very good all the year, and in a short time we may expect what we call the *old* mine to be in good condition, as it will be ventilated by the furnace in No. 2 mine.

Sprague mine has opened up considerable new work during the year, and the ventilation and drainage has been very good, and when an opening from one of the new headings has been made to the outside will be much better.

The Dixon mine, at Falls Creek, has been kept in good condition during the year, the ventilation and drainage being very good.

The Rochester mine, DuBois, operated by the Bell, Lewis and Yates Coal Mining Company, has worked fairly well during the year. The ventilation of the mine on the right has been good, as most of the work has consisted in pillar drawing. On the No. 1 side it has not been quite so good, as all the headings are being driven on that side, and as most of the headings go to the dip, they have been flooded out once or twice. Headings are now being pushed toward the new shaft, and a large fan will be erected there, as the one now in use is entirely too small for the work required of it, as this is one of the largest mines in the country.

The mines of the Rochester and Pittsburgh Iron and Coal Company, at Walston and Adrian, have been kept in good condition, the ventilation of Walston mines 1, 2 and 3 having been improved by the erection of large fans, and at Adrian No. 1 and 2 mines there are large fans at work that give good ventilation through the mines.

The Tyler mine has not been in the best condition during the year,

as considerable new work had to be done to put the mine in good condition. At my last visit it was better, but will not be much improved until all the old work is entirely cut off, which will be in a short time.

New Mines and Improvements.

At Morris Run a new drift has been put into the Seymour vein, a furnace built and road graded to the chutes at the Slope mine. A rock tunnel is being put in to drain the lowest workings of the Slope mine.

At Antrim a shaft has been sunk on to the Seymour vein, and a tunnel will be driven from the slope workings through the measures to the Seymour vein, and the coal hauled up the slope.

The new drift at Arnot, to be used as a water-way, has been put through into the workings, and will drain a large body of coal that can now be worked. A new opening has been put in at Landrus, and it is expected coal will be shipped in the spring. A new furnace is being built in the old No. 1 mine.

At Dagus mines one new opening (No. 25) has been put in during the year, and at Clarion No. 2, shutes have been built, roads graded and in the mines three furnaces have been built, and one furnace built in No. 3.

At Beech Tree one new mine (No. 3) has been opened, and a twenty-foot Guibal fan erected there.

At Tyler mine seventy coke ovens and a large bin for holding coal has been built during the year, also a large number of dwelling houses have been built. A new pulsometer has been put in the creek to pump water to the coke ovens.

A new Davidson pump has been put in the Long Valley mine.

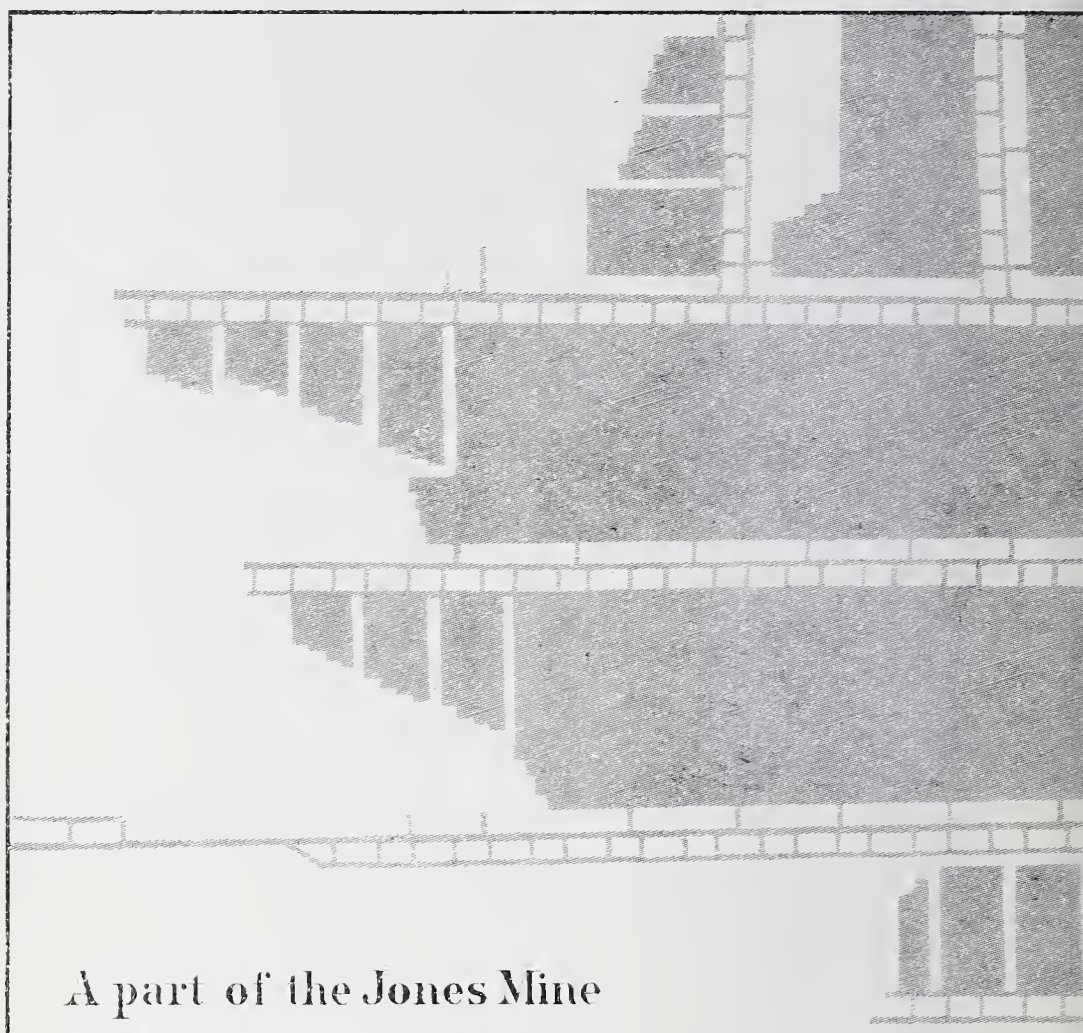
A large Griscom pump, capable of pumping 4,000 gallons per minute, has been put in the Bell, Lewis and Yates shaft, DuBois.

At Walston No. 1, a twenty-foot fan has been built, and at No. 2 a twenty-five-foot fan has been built. This company have also put in a new opening and built a railroad to the mine which is located on Big Run.

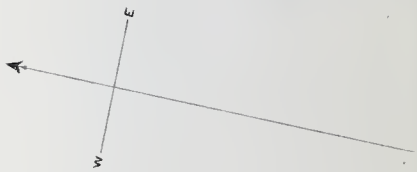
At Adrian powerful hoisting engines and boilers to supply pumps in the mine, and also the twenty-foot Guibal fan have been put in position during the year, also a new mine, known as Adrian No. 2, has been put in, and a twenty-foot Guibal fan erected to ventilate it. Chutes and bins have also been built, and over four hundred coke ovens erected, and a large amount of coal and coke is now being shipped.

At Horatio a new opening has been put in and fifty coke ovens built; a new slope is also being put down, and hoisting machinery is already in place. Coal will be shipped from these works by way of the new Bell's Gap extension.

At Soldier Run mine thirty-eight new coke ovens have been built, making the number now in operation one hundred.



A part of the Jones Mine
The Morris Run Coal Mining Co.
Morris Run Tioga County Pa.
1888.



ROGER HAMPSON,
MINE INSPECTOR,
4th Bituminous District.

SCALE- 1"- 325'

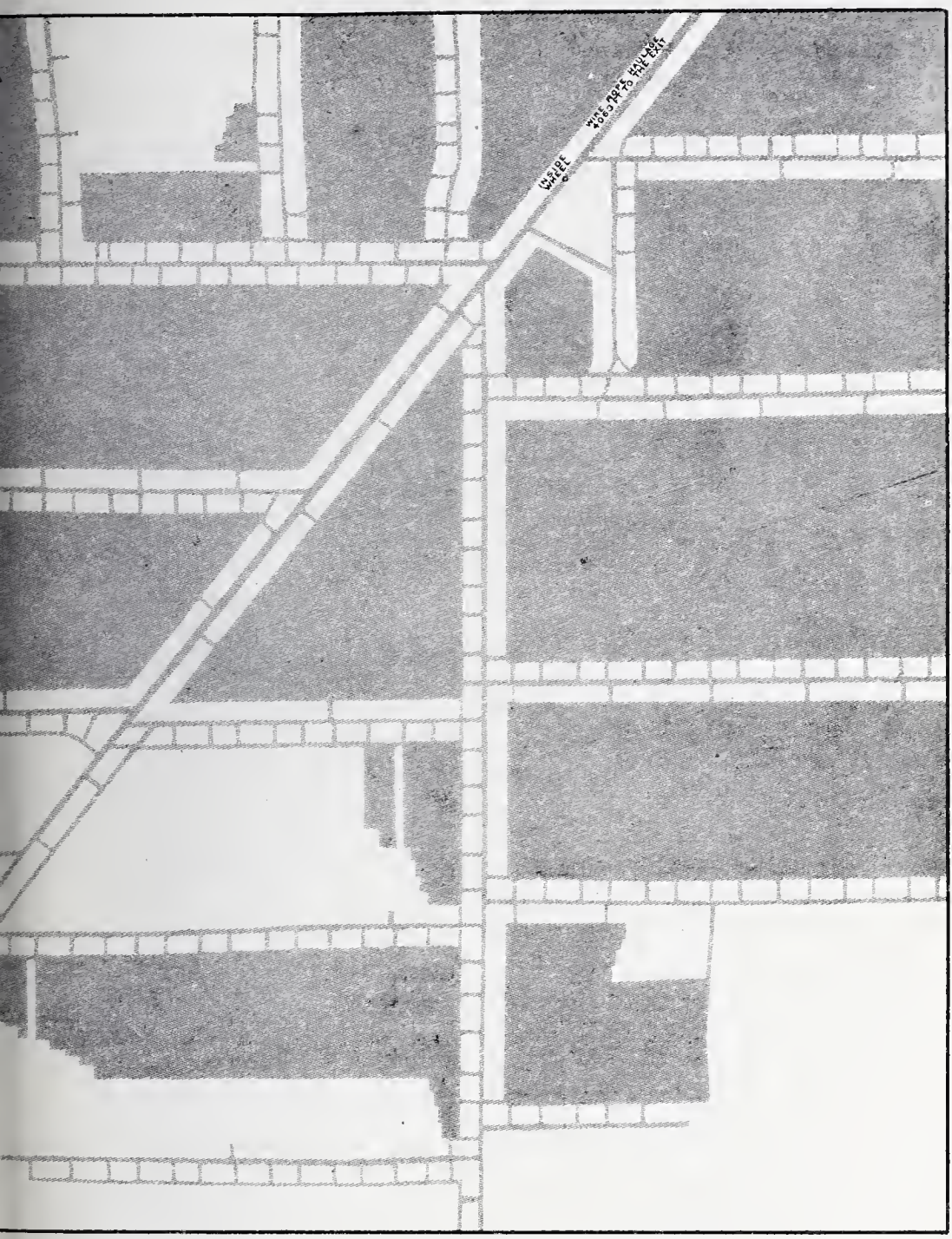

INSIDE WHEEL
WIRE ROPE HAULAGE 4060 FT TO THE EXIT

TABLE I.—Showing location of collieries in the Fourth Bituminous Mine District.

Name of Colliery.	Name of Operator.	Location—County.	Name of Superintendent.	Post office Address.
Adrian Mines, 1 and 2,	Rochester and Pittsburgh Iron and Coal Co.,	Jefferson,	J. H. Bell,	Adrian, Jefferson county.
Antrim, 1, 2 and 3,	Fall Brook Coal Co.,	Tioga,	James Pollock,	Antrim, Tioga county.
Arnot, 1, 2 and 3,	Blossburg Coal Co.,	Tioga,	F. F. Lyon,	Arnot, Tioga county.
Barclay,	Towanda Coal Co.,	Bradford,	R. T. Dodson,	Barclay, Bradford county.
Beech Tree, 1, 2 and 3,	Rochester and Pittsburgh Iron and Coal Co.,	Jefferson,	John H. Bell,	Adrian Mines, Jefferson county.
Cameron,	Cameron Coal Co.,	Cameron,	John Morris,	Cameron, Cameron county.
Cascade, 1 and 2,	Kaul & Hall,	Elk,	Andrew Kaul,	St. Marys, Elk county.
Clarion, 1, 2, 3, 4, 5 and 6,	N. W. Min & Exchange Co.,	Jefferson,	D. Robertson,	Dagus Mines, Elk county.
Clermont,	Buffalo Coal Co.,	McKean,	J. H. Tate.	Clermont, McKean county.
Coal Glen,	Jefferson Coal Co.,	Jefferson,	Austin Blakeslee,	Coal Glenn, Jefferson county,
Dagus Mines, 1 to 25,	N. W. Min. & Exchange Co.,	Elk,	D. Robertson,	Dagus Mines, Elk county.
Dixon Mine,	H. C. Springer & Co.,	Clearfield,	H. C. Springer,	Dubois, Clearfield county.
Eureka Slope,	Daniel Eldridge,	Elk,	Daniel Eldridge,	Scott's Block. Erie, Erie county.
Fall Brook, 1 and 2,	Fall Brook Coal Co.,	Tioga,	Fred ells,	Fall Brook, Tioga county.
Fall Creek,	Fall Creek Coal Co.,	Bradford,	W. M. Mallory,	Towanda, Bradford county.
Gaines, 1 and 2,	Gaines Coal and Coke Co.,	Tioga,	P. A. Jordan,	Gurnee, Tioga county.
Hamilton,	Bell, Lewis & Yates Coal Mining Co.,	Jefferson,	George Mellinger,	Reynoldsville, Jefferson county.
Hildrup.				
Instanter, 1 and 2,	Buffalo Coal Co.,	McKean,	J. H. Tate.	Clermont, McKean county.
Long Valley,	Long Valley Coal Co.,	Bradford,	E. O. Macfarlane,	Towanda, Bradford county.
Morris Run. 1, 2 and 3,	Morris Run Coal Mining Co.,	Tioga,	W. S. Nearing,	Morris Run. Tioga county.
Pleasant Valley,	Bell, Lewis & Yates Coal Mining Co.,	Jefferson,	Gcorge Mellinger,	Reynoldsville, Jefferson county.
Renovo Mines.				
Rochester,	Bell, Lewis & Yates Coal Mining Co.,	Clearfield,	L. Robinson,	DuBois, Clearfield county.
Sprague,	do. do. do. do.	Jefferson,	George Mellinger,	Reynoldsville, Jefferson county.
Soldier Run, 1 and 2,	do. do. do. do.	Jefferson,	do.	do. do.
St. Mary's, 1, 2 and 3,	St. Mary's Coal Co.,	Elk,	Joseph Eddy,	St. Marys, Elk county.
Tannerdale,	do. "	Elk,	do.	do. do.
Walston, 1, 2 and 3,	Rochester and Pittsburgh Coal and Iron Co.,	Jefferson,	John McLeavy,	Walston Mines. Jefferson county.
Williamsport,	Clearfield Coal Co.,	Clearfield,	E. A. Foster,	Tyler, Clearfield county.

TABLE No. 2—Gives the total number of tons of coal mined and tons of coke produced in each colliery, number of days worked, number of employés, number of persons killed and injured, number of kegs of powder used, &c., in the Fourth Bituminous Mining District, for the year ending December 31, 1887.

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Total production in tons of coke.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Number coke ovens.
Adrain Mines, 1 and 2,	Adrain, Jefferson county,	136,613	25,122	100,600	295	501	1	...	....	8	....	...	440
Antrim, 1, 2 and 3,	Antrim, Tioga county,	373,991	57,465	373,991	256	788	1	...	....	3	....	2	156
Arnot, 1, 2 and 3,	Arnot, Tioga county,	341,294	46,875	266,294	233	980	...	3	1,600	3	....	3	250
Barclay, 1 and 2,	Barclay, Bradford county,	99,116	.....	98,197	249	231	...	...	.....	...	...	1	....
Beech Tree, 1, 2 and 3,	Beech Tree, Jefferson county,	225,836	....	225,336	300	375	1	5	....	2	....	...	....
Cameron,	Cameron, Cameron county,	.....	.....	.....	...	...	...	...	.....	...	...	...	....
Cascade, 1 and 2,	St. Mary's, Elk county,	74,310	.....	74,310	300	83	...	...	.....	...	...	1	....
Clarion, 1, 2, 3, 4, 5 and 6,	Clarion, Jefferson county,	210,305	.....	210,305	257	318	...	5	1,170	1	...	1	....
Clermont,	Clermont, McKean county,	9,214	.....	9,000	210	28	...	...	.....	...	...	...	....
Coal Glen,	Coal Glen, Jefferson county,	122,784	.....	122,784	225	181	...	1	933	1	...	...	....
Dagus Mines, 1 to 25,	Dagus Mines, Elk county,	404,907	.....	391,081	260	664	...	1	2,318	10	...	2	36
Dixon Mine,	DuBois, Clearfield county,	50,892	.....	50,892	181	79	...	...	.....	...	...	...	....
Enreka Slope,	Dagus Mines, Elk county,	32,996	.....	32,996	228	80	...	...	108	2	...	...	....
Fall Brook, 1 and 2,	Fall Brook, Tioga county,	88,378	.....	88,378	290	205	1	...	.....	...	...	2	....
Fall Creek,	Barclay, Bradford county,	.....	.....	.....	...	...	...	...	.....	...	...	...	....
Gaines, 1 and 2,	Gaines, Tioga county,	10,856	.....	10,856	200	23	...	...	95	...	...	...	....
Hamilton,	Reynoldsville, Jefferson county,	.....	.....	.....	...	...	...	...	.....	...	...	...	....
Hildrnp,	DuBois, Clearfield county,	.....	.....	.....	...	...	...	...	.....	...	...	...	....
Instanter, 1 and 2,	Clermont, McKean county,	.....	.....	.....	...	...	...	...	.....	...	...	...	....
Long Valley,	Long Valley, Bradford county,	66,517	.....	66,517	220	153	1	...	600	...	...	...	....
Morris Run, 1, 2 and 3,	Morris Run, Tioga county,	475,901	.....	475,901	275	706	4	2	.....	...	...	1	....
Pleasant Valley,	Reynoldsville, Jefferson county,	.....	.....	.....	...	...	...	...	.....	...	...	...	....
Renovo Mines,	Renovo, Clinton county,	.....	.....	.....	...	...	...	...	.....	...	...	...	....
Rochester,	DuBois, Clearfield county,	336,036	12,093	336,036	212	493	...	8	2,400	5	...	1	56
Sprague,	Reynoldsville, Jefferson county,	.....	.....	.....	...	...	...	...	.....	...	...	...	....
*Soldier Run, 1 and 2,	Reynoldsville, Jefferson county,	418,554	14,930	418,554	203	580	1	4	2,000	...	...	1	100
St. Marys, 1, 2 and 3,	St. Mary's, Elk county,	81,002	.....	81,002	310	146	...	...	120	...	...	1	....
Tannerdale,	St. Mary's, Elk county,	16,542	.....	16,542	310	29	...	...	.....	...	...	...	....
Walston Mines, 1, 2 and 3,	Walston, Jefferson county,	584,135	230,344	218,161	313	741	3	...	.....	...	...	...	700
Williamsport,	Tyler, Clearfield county,	13,430	12,512	13,430	285	123	...	...	300	2	...	...	100
Total,		4,173,909	399,346	3,684,663	256	7,510	13	29	11,584	37	...	16	1,833

* The production, number of employees, etc., of Sprague and Hamilton mines are all included in report of Soldier Run mine.

TABLE No. 3—Showing the number of each class of employés at each colliery in the Fourth Bituminous Mine District, during the year 1888.

Names of Collieries.	Location.	Number of Persons Employed Inside.							Number of Persons Employed Outside.							Grand totals—Inside and outside.
		Inside foreman or mine boss.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Doorboys and helpers.	Total Inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All company men.	Superintendent, bookkeepers and clerks.	Total outside.	
Adrian, 1 and 2,	Jefferson,	1	329	7	3	15	3	358	...	6	6	...	127	4	143	501
Antrim, 1, 2 and 3,	Tioga,	2	514	30	52	37	20	655	...	16	7	...	103	7	133	788
Arnot, 1, 2 and 3,	Tioga,	2	480	121	38	79	33	753	...	10	9	...	203	5	227	980
Barclay,	Bradford,	1	137	30	4	20	1	193	...	3	2	...	31	2	38	231
Beech Tree, 1, 2 and 3,	Jefferson,	1	313	10	8	10	6	348	...	5	2	...	15	6	28	376
Cameron,	Cameron,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cascade,	Elk,	1	67	14	...	1	...	83	...	1	2	...	...	1	4	87
Clarion, 1, 2, 3, 4, 5 and 6,	Jefferson,	2	214	17	6	15	1	255	...	4	2	...	53	4	63	318
Clermont,	McKean,	1	23	1	...	2	...	27	...	...	...	...	...	...	1	28
Coal Glen,	Jefferson,	1	134	15	7	8	...	165	...	2	1	...	11	2	16	181
Dagus Mines, 1 to 25,	Elk,	3	490	25	13	30	1	562	...	18	6	...	71	7	102	664
Dixon Mine,	Clearfield,	1	61	2	1	5	2	72	...	1	...	...	4	2	7	79
Eureka Slope,	Elk,	1	60	4	2	3	...	70	...	2	2	...	3	3	10	80
Fall Brook, 1 and 2,	Tioga,	1	99	10	22	14	10	156	...	4	2	...	40	3	49	205
Fall Creek,	Bradford,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gaines, 1 and 2,	Tioga,	1	13	5	2	1	1	23	...	...	...	...	2	1	3	26
Hamilton,	Jefferson,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hildrup,	Clearfield,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Instanter, 1 and 2,	McKean,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Long Valley,	Bradford,	1	79	20	...	13	3	116	...	2	2	...	30	3	37	153
Morris Run, 1, 2 and 3,	Tioga,	3	447	130	17	35	22	654	...	6	4	...	25	7	42	696
Pleasant Valley,	Jefferson,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Renovo Mines,	Clinton,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rochester,	Clearfield,	2	315	67	17	29	25	455	...	4	6	...	30	3	43	498
Sprague,	Jefferson,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

TABLE No. 3—*Continued.*

Names of Collieries.	Location.	Number of Persons Employed Inside.						Number of Persons Employed Outside.							
		Inside foreman or mine boss.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Doorboys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All company men.	Superintendent, bookkeepers and clerks.	Total outside.	Grand totals—inside and outside.
*Soldier Run, 1 and 2,	Jefferson,	3	409	43	23	18	16	532	...	4	3	...	37	4	48	580
St. Mary's, 1, 2 and 3,	Elk,	2	93	16	17	7	...	135	...	2	2	...	5	2	11	146
Tamerdale,	Elk,	1	19	2	...	3	...	25	...	1	...	...	2	1	4	29
Walston, 1, 2 and 3,	Jefferson,	3	616	...	...	40	35	694	...	10	10	...	20	1	47	741
Williamsport,	Clearfield,	1	92	1	6	7	3	110	...	3	2	...	5	3	13	123
Total,		34	4,943	568	237	407	180	6,441	...	103	70	...	813	75	1,069	7,510

TABLE No. 4.—List of fatal accidents occurring in about the mines of the Fourth Bituminous Mine District, for the year ended December 31, 1887.

Date of accident.	Names of Person.	Occupation	Age.	Widow.	Number of orphans.	Name of Colliery. Location—County.	Nature and Cause of Accident.
Jan. 8,	Thomas Smith,	Miner,	37	1	5	Antrim, Tioga county,	Fatally injured by a fall of coal.
Feb. 2,	William Marks,	Miner,	30	1	2	Long Valley, Bradford county,	Killed by an explosion of powder.
3,	James Holmes,	Miner,	39	1	4	Fall Brook, Tioga county,	Killed by a fall of coal.
April 4,	Rosso Phillippo,	Miner,	27	S.	...	Beech Tree, Jefferson county,	Killed by a fall of slate.
May 22,	David Howells,	Miner,	48	M.	1	Walston No. 2, Jefferson county,	Killed by a fall of coal.
June 21,	Thomas Brennan,	Miner,	19	S.	...	Morris Run, Tioga county,	Killed by an explosion of powder.
Aug. 15,	John D. Reed,	Miner,	21	S.	...	Morris Run No. 3, Tioga county,	Killed by a fall of coal.
17,	George Blanchard,	Miner,	44	M.	1	Soldier Run, Jefferson county,	Killed by a fall of coal.
30,	Robert Bell,	Miner,	20	S.	...	Morris Run (Slope), Tioga county,	Fatally injured by a fall of roof.
Sept. 14,	Henry Williams,	Miner,	37	M.	2	Walston No. 1, Jefferson county,	Killed by a fall of clay.
Dec. 22,	Peter Holt,	Miner,	54	M.	...	Morris Run No 3, Tioga county,	Fatally injured by a mine car.
Dec. 23,	Robert Crawford,	Miner,	13	...	...	Adrain No. 1, Jefferson county,	Fatally injured by a fall of coal.
	John Watkins,	Runner,	...	...	...	Waldon No. 2, Jefferson county,	Killed by a mine car.

TABLE No. 5.—List of non-fatal accidents occuring in and about the mines of the Fourth Bituminous Mine District, for the year ended Deeember 31, 1887.

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Married.	Number of children.	Name of colliery.	Location--County.	Nature and Cause of Accident.
Jan. 25,	D. Meeghan, ...	Miner, ...	39	M.	. . .	Rochester, ...	Clearfield, ...	Foot crushed and back hurt by fall of fire-clay.
Feb. 7,	William Smith, ...	Road cleaner, . . .	60	M.	. . .	Antrim, ...	Tioga, ...	Leg broken while cleaning around bull wheel in the slope.
25,	John Groning, ...	Miner, ...	30	S.	. . .	do.	Tioga, ...	Head and face cut by fall of top.
Mar. 1,	D. Collins, ...	Miner, ...	29	S.	. . .	Rochester, ...	Clearfield, ...	Leg broken by fall of fire-clay.
8,	John Eadie, ...	Miner, ...	45	M.	. . .	Arnot, ...	Tioga, ...	Arm broken by a fall of coal.
April 15,	William Johns, ...	Miner, ...	27	S.	. . .	Clarion, ...	Jefferson, ...	Three ribs broken by fall of coal while mining.
27,	Patrick Fox, ...	Miner, ...	25	M.	. . .	Hamilton, ...	do.	Hurt on back and legs by a fall of roof.
27,	Henry Fox, ...	Miner, ...	17	S.	. . .	do.	do.	Hurt slightly by fall of roof.
27,	Henry Seibert, ...	Miner, ...	40	M.	. . .	do.	do.	Hurt slightly by fall of roof.
May 13,	Andrew Core, ...	Miner, ...	38	W.	. . .	Clarion, ...	do.	Leg broken by a fall of coal.
June 23,	John Libertin, ...	Miner, ...	. . .	. . .	. . .	Beech Tree, ...	do.	Fingers smashed while lifting car on track.
28,	James Shearer, ...	Miner, ...	18	. . .	. . .	do. . . .	do.	Leg broken by being caught between bumpers of empty cars.
July 13,	Christof Holtz, ...	Miner, ...	38	. . .	. . .	Morris Run, ...	Tioga, ...	Cut on neck; fell from mine wagon.
18,	George Hopkins, ...	Driver, ...	19	S.	. . .	Beech Tree, ...	Jefferson, ...	Jumped off cars to sprag, was thrown down and the linch-pin in car wheel cut his leg and broke small bone.
Ang. 2,	Frank Bokett, ...	Miner, ...	29	M.	. . .	Clarion, ...	do.	Collar bone broken by fall of coal.
23,	Thomas Moody, ...	Miner, ...	44	M.	. . .	Beech Tree, ...	do.	Collar bone broken by fall of coal.
Sep. 1,	John McKay, ...	Miner, ...	50	M.	. . .	Coal Glen, ...	do.	Two ribs broken by fall of slate.
26,	Edward Berick, ...	Road man, ...	38	M.	. . .	Cascade, ...	Elk, ...	Arm broken and hand cut; was rolling a piece of slate away when it struck a prop, knocking it out, and a piece of slate fell on his arm and hand.
Oct. 1,	Frank Laraye, ...	Miner, ...	39	M.	. . .	Clarion, ...	Jefferson, ...	Ankle bone broken by a fall of stone from the roof.
Nov. 3,	John Johnson, ...	Miner, ...	20	S.	. . .	Antrim, ...	Tioga, ...	Leg broken by fall of top coal.
Dec. 4,	Samuel Heron, ...	Miner, ...	. . .	. . .	. . .	Arnot, ...	Tioga, ...	Three ribs broken by a fall of coal.
16,	F. Hover, ...	Miner, ...	34	. . .	. . .	Hamilton, ...	Jefferson, ...	Leg injured slightly by fall of coal.

FIFTH BITUMINOUS DISTRICT.

To the Hon. THOMAS J. STEWART,
Secretary of Internal Affairs:

SIR:—In compliance with the tenth section of the act entitled "An act relating to bituminous coal mines, and providing for the lives, health, safety and welfare of persons employed therein," approved June 30, 1885, I have the honor of submitting herewith my annual report for the Fifth bituminous coal district, for the year ending December 31, 1887.

It affords me great pleasure to be able to state that the number of accidents, both fatal and non-fatal, have been greatly reduced from that of 1886. The number of accidents reported during the year is forty-two, eight of which proved fatal and fifty-four non-fatal, which is a reduction of ten fatal and fourteen non-fatal as compared with the number reported in 1886.

Causes of Accidents.

	Fatal.	*Non-fatal.*
By falls of roof and coal,	3	16
By falling down shaft,	1	
By pit cars,	2	13
Miscellaneous causes,	2	5
	8	34

Owing to the prolonged strike, which lasted nearly three months at quite a number of the mines, the production of the district is much less than it otherwise would have been.

From the following tables, compiled from the reports received, it will be seen that the total production of coal in tons in the district for the year was 4,563,657. Total production of coke, 2,755,394. Total coal shipments, 406,001 tons.

Comparing these figures with those of 1886, we find in the district an increase in coal production of 9,955 tons. We find a decrease in coke production of 77,494 tons, and an increase in coal shipments of 71,901 tons. Of the number of persons employed we find an increase of 656 inside and 533 outside, making a total of 1,189 persons.

Of the total production, we find that there was mined and produced in the Fayette county mines in this district of tons of coal, 4,214,160; coke, 2,732,789. Of coal shipments, 104,111.

In the Somerset county mines, of tons of coal, 349,497; coke, 22,605, and of coal shipments, 301,890.

In addition to the ventilating fans in the district at the beginning of the year, there were eight new fans built during the year, and they are now running and giving good results. Seven new mines have been put in operation during the year.

Number of mines in the district employing over ten persons,	68
Number of mines not operated to their full capacity, and employing less than ten,	8
Number reported idle,	2
Total number of mines,	78
Number of tons of coal mined,	4,563,657
Number of tons of coke produced,	2,755,394
Number of tons of coal shipped,	406,001
Number of persons employed inside,	4,589
Number of persons employed outside,	3,313
Total number of persons employed,	7,902
Number of coke ovens reported,	8,090
Number of fatal accidents,	8
Number of non-fatal accidents,	34
Number of tons of coal mined per fatal accident,	$570,457\frac{1}{8}$
Number of tons of coal mined per non-fatal accident,	$134,225\frac{7}{34}$

Accompanying the report there is a photograph of the tipple and coke works of the Youngstown Coke Company, Limited.

All of which is respectfully submitted.

Yours very respectfully,

J. J. DAVIS,
Inspector.

CONNELLSVILLE, FAYETTE COUNTY, Pa.,
February 13, 1888.

TABLE A.—Total production in Fifth Bituminous Coal District for 1887, compared with 1886.

	Total production of coal.	Total production of coke.	Total shipments of coal.	Total number of persons employed inside.	Total number of persons employed outside.	Total number persons employed.	Total number of coke ovens.
1887,	4,563,657	2,755,394	406,001	4,589	3,313	7,902	8,090
1886,	4,553,702	2,832,888	324,100	3,933	2,780	6,713	7,239
Increase production in 1887,	9,955	. . . . .	71,901	657	533	1,189	851
Decrease production in 1887,	. . . . .	77,494	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .

TABLE B.—Showing production in Fifth Bituminous Coal District of Mines operated in Fayette and Somerset counties in 1887 and 1886.

	Coal.	Coke.	Coal shipment.	Number persons employed inside.	Number persons employed outside.	Total number employed.
1887.						
Fayette,	4,214,160	2,732,789	104,111	4,119	3,234	7,353
Somerset,	349,497	22,605	301,890	470	79	549
Total,	4,563,657	2,755,394	406,001	4,589	3,313	7,902
1886.						
Fayette,	4,301,980	2,819,428	97,279	3,552	2,713	6,265
Somerset,	251,722	13,460	226,821	381	67	448
Total,	4,553,702	2,832,888	324,100	3,933	2,780	6,713

TABLE C.—The production of each section compared with 1886.

	Fayette County Mines.			Somerset County Mines.		
	Coal.	Coke.	Coal shipment.	Coal.	Coke.	Coal shipment.
1887,	4,214,160	2,732,789	104,111	349,497	22,605	301,890
1886,	4,301,702	2,819,428	97,279	251,722	13,460	226,821
*	—87,542	—86,639	+6,832	+97,775	+9,145	+75,069

* — Amount of loss in production in 1887, compared with 1886.

* + Amount of increase in production over 1886.

Fayette County Mines.

Anchor Mines.—On my last visit to this mine I found the mine well ventilated. During the year a twelve-foot fan had been erected and is giving great satisfaction.

Atlas.—A slope opening. Ventilated by fan. When visited in November they were working on three flats. There was one heading driving, and room workings on four headings. Owing to part of the mine having been on fire, solid brick stoppings have been built to close the burnt section and to keep it from endangering the working parts.

Clinton.—This mine when visited was in very fair condition. Furnace ventilation. Cubic feet of air in circulation, 13,440.

Coal Brook.—On my last visit to this mine I found 13,680 cubic feet of air in the return, and general condition good.

Cora.—This little mine is always in good condition. On my last visit the air circulation was 20,670 feet.

Clarissa.—The workings of this mine were in fair condition on each of my visits. Air measurements show currents of from 8,640 to 13,920 cubic feet passing through the workings. Drainage good.

Connellsville Shaft.—This mine has three openings. The ventilation produced by a Murphy fan. Air measurements when taken showed a current from 28,160 to 43,200 cubic feet. I find this mine generally well ventilated and the workings in fair condition except that some of the working faces are at times troubled with roof water.

Diamond.—This mine was in fair condition when visited. The ventilation over double the amount required by law.

Dexter.—The ventilation when visited showed a current of air measuring 8,400 cubic feet.

Eagle and Foundry.—These mines are connected and under the same management. The ventilation of both is produced by a furnace. Air measurement taken on the main heading of the Eagle gave 12,800 cubic feet of air. On the same visit on the return air way in the foundry I found 12,320.

Fountain.—This mine has been idle for a number of years and was only started during the year, and at the time of my visit the ventilation was not fully established to all parts, but since then it has been put in good condition. The December report showed over 12,000 cubic feet in circulation.

Fayette —This mine was in fair condition when visited as to drainage, and the ventilation was from 15,360 to 19,600 cubic feet.

Frick.—I have always found the ventilation of this mine in good condition.

Franklin.—This mine is ventilated by a furnace. Number of cubic feet in circulation on my visits, from 16,800 to 19,600. Ventilation and drainage good.

Fort Hill.—This mine has four openings and is generally in fair condition.

Fairchance.—Ventilation when last visited in fair condition.

Grace.—The ventilation is by furnace, but owing to its size and location and the increased rubbing surface that the air encounters in its passages, it is not thorough. The remedy is promised.

Henry Clay.—During the year the ventilation of this mine has been much improved by the erection of a new twelve-foot fan.

Hill Farm.—The workings of this mine are on four flats, two on each side of slope. The ventilation in fair condition. I ordered safety lamps to be used in all rib and pillar workings.

Jackson.—This mine has three openings. Cubic feet of air in circulation when visited, 8,160. Condition fair.

Kyle Farm.—I find the condition of this mine as to ventilation and drainage good.

Lemont.—The ventilation of this mine as taken on my visits during the year show the volume of air to be from 23,310 to 28,800 cubic feet in circulation.

Leith.—The workings of this mine are extensive. Ventilation by a fan produces a large current of air passing through the workings. Several improvements have been made in the air-ways by overcasts and by changing the direction of the air, etc.

Leisenring No. 1.—The workings of this mine are in three sections. The ventilation is produced by fan twenty foot in diameter. Air measurements on the return north side gave 76,200 cubic feet and in the return south side 52,000 cubic feet

Leisenring No. 2.—This is an extensive mine. It is well ventilated and was in good condition when visited.

Leisenring No. 3.—This mine is not yet ready for operation.

Mahoning.—This mine has three openings—the slope and two manways. The workings when visited in December were on four flats, and the ventilation and drainage in fair condition.

Morrell.—The ventilation here is produced by a Murphy fan and steam. Several improvements have been made at this mine during the year. The plan of mining adopted two years ago still continues, viz: Each working flat consists of a loaded hauling-way, an empty hauling-way, and an independent air course from which a separate supply of air is furnished to each butt-heading through an independent air-course. Butt-headings are driven parallel with the slope, leaving pillars one hundred feet thick, and strong enough to resist any squeeze, etc. The mine has been in operation two hundred and thirty days during the year.

Mt. Braddock.—This is a slope opening, and has been idle for a number of years. The mine is now operated by Robert Hogett & Co., employing about twenty miners, and has been in operation about one hundred and fifty days during the year.

Nellie Drift.—On my last visit I made several air measurements, and found both the ventilation and drainage in fair condition.

Nellie Shaft.—This is a new mine sunk, and is equipped with substantial hoisting machinery. When visited in November the second opening shaft was not completed, but it has been since, and is now made use of for a traveling-way. December monthly report shows the mine well ventilated.

Paul.—Is a new mine opened by W. J. Rainey, near the above. It is a drift opening, and there are eighty-three ovens built.

Parrish.—This mine is connected to the Hill Farm and operated by the same company. The ventilation is also connected and produced in the same manner.

Painter.—A drift opening. Ventilation produced by furnace. Air measurement taken in the return showing a volume of 15,680 feet. During the year a new pit-mouth was made. The mine all through in fair condition.

Percy.—Working in two flats when visited in December, one on the right and the other on the left of slope. Air measurement taken showed 15,120 cubic feet in the return current.

Plumer.—This is a drift opening. The ventilation up to April 16 was produced by furnace. On that day the stack on top of the furnace shaft caught fire and the furnace set the coal on fire, and in spite of all the efforts made to arrest its progress, it still gained until the openings of the mines were destroyed and had to be sealed up. When the fire was discovered all the persons in the mine made their escape through an adjoining country pit, with the exception of one man, who refused to leave his work when called upon, and whose body was afterward found. The company immediately put a shaft down near the face of the workings. This was soon accomplished, and a fan erected which forced the air into the mine. When it had reached the point of the fire, strong and substantial brick stoppings were built to close all the approaches to the burning parts and to exclude all the air from any communication with the fire in order to smother it. When this was done, all workings were suspended. Some time after, the company purchased another field of coal adjoining and have made new openings which are connected with the old workings through which the coal is taken out. Great credit is due to Charles Davidson, general manager of these works, and Thomas Louden, mine-boss; also to Robert Ramsay, general superintendent of H. C. Frick Coke Company mines.

Pennsville.—There has been an important improvement made at this mine during the year by the erection of a new fan. The ventilation and drainage are in good condition.

Redstone.—This is one of the most extensive mines in this district. A fan twenty feet in diameter produces the ventilation. It is used for an exhaust and located near the top of a shaft which was sunk for

the purpose of ventilation and drainage. Near the bottom of this shaft on my last visit, I found by air measurements in the return from the southside workings 52,800 cubic feet of air and 29,700 in the return from the working on the north side. During the year they have put in place three new boilers. There are also 141 new ovens built and a reservoir to contain 12,000,000 gallons of water.

Rist Mine.—Is ventilated by furnace. Thirty-nine thousand two hundred cubic feet of air reported in circulation in December. All the workings in fair condition when visited.

Rainbow.—Is a drift opening located on the P., McK. and Y. R. R., employing about forty miners working in the Pittsburgh coal seam. There are three drift openings to this mine and the ventilation has been produced by natural means, but as the workings extend it will soon need artificial ventilation.

Rolling Mill.—This mine during the year has not been under the provisions of the law for a greater part of the time, and not being operated.

Summit Mines.—The amount of air in circulation in this mine at time of my last visit, 30,780 feet, produced by a furnace, and the workings in fair condition.

Sterling No. 1.—Located near Jimtown. Ventilation by furnace; 44,000 cubic feet of air in circulation at time of my last visit in December, and the mine, as regards both ventilation and drainage, in good condition.

Sterling No. 2.—Located on the Baltimore and Ohio Railroad, near Broadford. Twelve thousand cubic feet of air in circulation. All of the working parts in fair condition.

Stewart.—A slope opening, and in good condition on my last visit. A full description of this mine was given in the report of 1886.

Tip Top.—This mine when visited was in good condition. There has been erected during the year a fan twelve feet in diameter which gives great satisfaction.

Tyrone.—The workings of this mine were in fair condition when visited on the 28th of November.

Trotter.—This mine was in operation two hundred and sixty-nine days during the year. The workings are in three sections, and all on the double heading plan. The ventilation produced by a fan twenty-five feet in diameter, which is the largest in this district. On my visits I find air circulation good, and the condition of the workings carefully watched.

Union.—Drift opening located on the Redstone branch of the P. V. & C. R. R. The mine has several openings. The number of cubic feet of air in circulation on my last visit was 8,100.

Uniondale.—The ventilation of this mine has been improved during the year by the erection of a fan. The mine-boss reports that eighty

revolutions of the fan per minute gave him 45.000 cubic feet of air. When visited last I found strong current of air in circulation.

Valley.—I found this mine on my last visit in good condition. Total number of cubic feet of air in circulation, 64,260.

White.—The ventilation of this mine has been improved by the erection of a new fan twelve feet in diameter. The condition of mine good.

Coöperative.—This mine was opened during the year by a party of miners. When visited on the 17th of November mine was in fair condition.

Frog Hill and Fair View.—These mines are both drift openings. Ventilation and drainage fair on my last visit. Measurements taken showed 10,800 cubic feet of air in circulation.

Grassy Run.—This mine was opened during the year. At the time visited, November 17th, it was not running. Mining boss, John Meager.

Wheeler.—Is a slope opening ventilated by a six-foot Murphy fan. Amount of air in circulation on my last visit, November 11th, 34,560 cubic feet.

Wynn.—This is a new mine opened during the year by the Wynn Coke and Mining Company, Limited. Some changes were required in the ventilation.

Youngtown.—This mine was in good condition on my last visit with 72,920 cubic feet of air in circulation. The following is a photograph of works.

Somerset County Mines.

Berlin.—Small mine. Total production, 5,006 tons. Located on the Berlin branch of the Baltimore and Ohio railroad.

Buffalo.—This mine is also located on the Berlin branch of the Baltimore and Ohio railroad; operated by the Buffalo Creek Coal Company. Number of day's work, 135. When visited, the ventilation had not been fully established and improvements were in progress.

Casselman.—A slope opening near Garrett, on the Baltimore and Ohio railroad. On my last visit I found the ventilation improved and the general condition fair.

C. and E. L. C. Co. Mine.—This mine is the most extensive mine in this county, and is ventilated by a furnace Number of cubic feet of air in circulation on my last visit, 18,900. The workings are well ventilated.

Cochran.—This mine only employed a small number of miners, and work was suspended early in the year.

Cumberland.—This is a new mine, opened during the year 1886. On my last visit the ventilation was in fair condition and drainage good. Air measurement gave 9,600 cubic feet of air in circulation.

Hamilton and Cochran.—New mines opened during the year. Is

also a drift opening. Number of days worked, 120. There is an air-shaft for ventilation and the workings are connected with those of the Cumberland mine. Measurement taken on my last visit showed 6,545 cubic feet of air in circulation.

Keystone.—This mine was visited in December The ventilation at the time was good. Syphon is used for drainage, and the mine is at times troubled with water.

Statler.—This mine was worked during the year 200 days. Total production, 10,000 tons. Ventilation reported in December gave from 4,760 to 5,600 at the in-take.

Thomas.—This mine worked 238 days. On my last visit I found the ventilation fair and the drainage good.

Tub Mill Run.—This mine was work 195 days. When visited, November 16, I found both ventilation and drainage in fair condition.

The coroners' inquests that were held on the bedies of Andrew Turley, who was fatally injured at the "Leisenring Mine No. 2, on February 20, 1887, and on Charles Tigh, who was fatally injured in the mine at Youngstown, held on November 15, 1887, and on Alphonzo Tellprato, who was killed at the "Nellie mine," held on November 29, 1887, found that the deaths aforesaid were in each case the result of accidents, for which the respective companies were in nowise responsible.

TABLE I.—Showing location of collieries in the Fifth Bituminous Mine District.

NAME OF COLLIERY.	Name of Operator.	Location—County.	Name of Superintendent.	Postoffice Address.
Anchor,	Penn'a. M. M. & S. Company,	Dunbar, Fayette,	Charles A. Laing,	Dunbar Fayette co.
Atlas,	Atlas Coke Company, Limited,	do. do.	James Hendorsou,	do. do.
Berlin,	B. D. Morgan & Company,	Berlin, Somerset,	B. D. Morgan,	Berlin, Somerset co.
Buffalo,	Buffalo Creek Coal Company,	Berlin Branch, Somerset,	S. D. Samuel,	Garrett, Somersot co.
Clinton,	B. F. Keister & Company,	Owensdale, Fayette,	A. L. Keyster,	Owensdale, Fayette co.
Coal Brook,	Rafferty & Donnelly,	Coal Brook Coke Works, Fayette,	M. J. Pickard,	Moyer, Fayetto co.
Cora,	J. Newmeyer & Sons,	Jimtown, Fayette,	J. Newmeyer,	Dawson, Fayette co.
Clarissa,	James Cochran Sons & Company,	Vanderbilt, Fayette,	P. G. Cochran,	Vanderbilt, Fayette co.
Casselman,	Casselman Coal Company,	Garrett, Somerset,	W. H. Hocking,	Meyersdale, Somerset co.
Cochran,	James Cochran,	West Salisbury, Somerset,	James Cochran,	Elk Lick, Somerset co.
C. & E. L. Coal Co. Mine,	Cumberland and Elk Lick Coal Company,	Meyersdale, Somorset,	A. Chamberlin,	Meyersdale, Somerset co.
Cumberland,	Cumberland C. and M. Company,	Grassy Run, Somorset,	John Hocking, Sr.,	do. do.
Co-operative,	Co-operative Coal Company,	do. do.	John B. Short,	Elk Lick P. O., Somerset co.
Connellsville Shaft,	P. and C. Gas Coal and Coke Company,	Connellsville, Fayette,	Charles Davidson,	Connellsville, Fayette co.
Diamond,	McClure & Company,	McClure Station, Fayette,	S. C. White,	Scottdale, Westmoreland co.
Dexter,	J. R. Sauffer & Company,	West Overton Station, Fayette,	S. R. Fairchild,	do. do.
Eagle,	H. C. Frick Coke Company,	B. & O. Mt. Pleasant Br., Fayette,	Robert Ramsay,	Mt. Pleasant, Westmoreland co.
Furnace,	E. A. Humphries,	Everson, Fayette,	E. A. Humphries,	Scottdale, Westmoreland, co.
Foundry,	H. C. Frick Coke Company,	B. & O. Mt. Pleasaut Br., Fayette,	Robert Ramsay,	Mt. Pleasant, Westmoreland co.
Frick,	do. do.	Broad Ford, Fayette,	do.	do. do.
Franklin,	B. F. Keister & Company,	Owensdale, Fayette,	B. F. Keyster,	Owensdale, Fayette co.
Fort Hill,	W. J. Rainey,	Fort Hill Mine, Fayette,	E. F. Huston,	Dawson, Fayette co.
Fairchance,	Fairchance Furnace Company,	Fairchance, Fayetto,	R. L. Martin,	Fairchance, Fayette co.
Flag Hill,	Fair View Somerset Company,	Grassy Run, Somerset,	Thomas Rees,	Meyersdale, Somerset co.
Fair View,	do. do. do.	do. do.	do.	do. do.
Fayette,	Fayette Coke and Furnace Company,	Olephant Furnace, Fayette,	A. B. de Saulles,	Olephant Furnace, Fayette co.
Fountain,	E. A. Humphries.	Scottdale Station, Fayette,	E. A. Humphries,	Scottdale, Westmoreland co.
Grassy Run,	Grassy Run Coal Company,	Grassy Run, Fayette,	John Meager,	Elk Lick, Somerset co.
Grace,	W. J. Rainey,	Moyer Station, Fayette,	Thomas Johns,	Moyer, Fayotte co.
Great Bluff,	Isaac Taylor.	Dunbar, Fayette,	Isaac Taylor,	Dunbar, Fayette co.
Henry Clay,	H. C. Frick Coke Company,	Broad Ford, Fayette,	Robert Ramsay,	Mt. Pleasant, Westmoreland co.
Hill Farm,	Dunbar Furnace Company,	Dunbar, Fayette.	H. W. Hazard,	Dunbar, Fayette co.
Hamilton,	Cochran & Hamilton,	Grassy Run, Fayette,	James Cochran,	Elk Lick, Somerset co.
Hoblitzoll,	Hoblitzoll & Price,	Berlin Branch, Somorset,	J. J. Hoblitzell,	Meyersdale, Somerset co.
Hocking,	Hocking Coal Company,	Grassy Run, Somerset,	John T. Hocking,	do. do.
Home,	Stauffer & Wiley,	Valley Station, Fayette,	J. W. Wiley,	Scottdale, Westmoreland co.
Jackson,	Jackson Mines Company,	Dawson, Fayette,	J. T. Cochran,	Dawson, Fayette co.
Kyle Farm,	Bliss & Marshall,	Fairchance, Fayette,	John W. Sterling,	Fairchance, Fayetto co.
Keystone,	Keystone Coal Company,	Meyersdale, Somersot,	Edward Weld,	Meyersdale, Somerset co.
Leith,	The Chicago and Connellsville Coke Company,	Leith Station, Fayette,	Charles McSweeney,	Uniontown, Fayette co.
Leisenring No. 1,	The Connellsville Coke and Iron Company,	Leisenring, Fayette,	J. K. Taggart,	Leisonring, Fayette co.
Leisenring No. 2,	The Connellsville Coke and Iron Company,	West Leisonring, Fayette,	S. B. Price, Jr.	West Leisenring, Fayette co.
Lemont,	Robert Hoggsett & Company,	Lemont, Fayette,	Robert Hogsett,	Lemont Furnace, Fayette co.
Mahoning,	Cambria Iron Company,	Dunbar, Fayette,	Isaac Taylor,	Dunbar, Fayette co.
Morrell,	do. do. do.	Morrell, Fayette.	James F. Boattie,	Connellsville, Fayette co.
Morgan,	H. C. Frick Coke Company,	Morgan Station, Fayette,	Robert Ramsay,	Mt. Pleasant, Westmoreland co.

Mt. Braddock,	Robert Hogsett,	Mt. Braddock Station, Fayette,	Charles Colburn,	Mt. Braddock, Fayette co.
Nellie Drift,	Brown & Cochran,	Vanderbilt, Fayette,	P. G. Cochran,	Vanderbilt, Fayette co.
Nellie Shaft Mine,	do.	do.	do.	do.
Painter,	McClure & Company,	McClure Station, Fayette,	S. C. White,	Scottdale, Westmoreland co.
Pennsville,	Pennsville Coke Company,	Pennsville, Fayette,	J. L. Dillinger,	Pennsville, Fayette co.
Percy,	Percy Mining Company,	Percy Coke Works, Fayette,	L. de Saulles,	Uniontown, Fayette co.
Philson,	Philson Iron Company,	Berlin Branch, Somerset,		Berlin, Somerset co.
Plumer,	Pittsburgh and Connellsville Gas Coal and Coke Co.,	Connellsville, Fayette,	Charles Davidson,	Connellsville, Fayette co.
Parrish,	Dunbar Furnace Company,	Ferguson Station, Fayette,	H W. Hazard,	Dunbar, Fayette co.
Paul,	W. J. Rainey,	Vanderbilt, Fayette,	A. J. Hill,	Dawson, Fayette co.
Redstone,	Redstone Coke Company, Limited,	Brownfield Station, Fayette,	S. E. Wadsworth,	Uniontown, Fayette co.
Rist,	H. C. Frick Coke Company,	Broad Ford, Fayette,	Robert Ramsay,	Mt. Pleasant, Westmoreland co.
Rainbow,	Rainbow Coal and Coke Company,	Rainbow Coal Works, Fayette,	D. P. Whitsett,	Jacob Creek, Westmoreland co.
Rolling Mill,	Scottdale Iron and Steel Company, Limited,	Everson, Fayette,	C. L. Graff,	Scottdale, Westmoreland co.
Summit Nos. 1 and 2,	H. C. Frick Coke Company,	Summit Station, Fayette,	Robert Ramsay,	Mt. Pleasant, Westmoreland co.
Sterling,	J. M. Schoonmaker,	Jimtown, Fayette,	Milson Rosser,	Dawson, Fayette co.
Sterling No. 2,	do.	B. & O. R. R., Fayette,	do.	do.
Stewart,	Stewart Iron Company, Limited,	Evans Station, Fayette,	F. C. Van Dusen,	Uniontown, Fayette co.
Salisbury,	C W. Williams,	West Salisbury, Somerset,	Thomas Williams,	Elk Lick, Somerset co.
Statler,	E Statler,	Grassy Run,	E. Statler,	do.
Tip Top,	H. C Frick Coke Company,	Valley, Fayette,	Robert Ramsay,	Mt. Pleasant, Westmoreland co.
Tyrone,	Laughlin & Company, Limited,	Broad Ford, Fayette,	C. Wharton,	Broad Ford, Fayette co.
Tub Mill Run,	Fair View Coal Company,	Salisbury Branch, Somerset,	Thomas Rees,	Meyersdale, Somerset co.
Thomas,	Thomas & Smith,	do. do.	Benjamin Thomas,	do.
Trotter,	H. C. Frick Coke Company,	Trotter, Fayette,	Robert Ramsay,	Mt. Pleasant, Westmoreland co.
Union,	J. D. Boyd & Company,	Smock, Fayette,	J. D. Boyd,	Uniontown, Fayette co.
Uniondale,	Reid Brothers,	Dunbar, Fayette,	J. M. Reid,	Dunbar, Fayette co.
Valley,	H. C. Frick Coke Company,	Valley Station, Fayette,	Robert Ramsay,	Mt. Pleasant, Westmoreland co.
Wheeler,	Cambria Iron Company,	Wheeler, Fayette,	James F. Beattie,	Connellsville, Fayette co.
White,	H. C. Frick Coke Company,	Morgan Station, Fayette,	Robert Ramsay,	Mt. Pleasant, Westmoreland co.
Wynn,	Wynn Coke and Mining Company,	Wynn Coke Work, Fayette,	Robert W. Lawhead,	Oliphant Furnace, Fayette co.
Youngstown,	Youngstown Coke Company, Limited,	Youngstown Station, Fayette,	Frank R. Bradford,	Uniontown, Fayette co.

TABLE NO. 2—Gives the total number of tons of coal mined and tons of coke produced in each colliery, number of days worked, number of employés, number of persons killed and injured, number of kegs of powder used, &c., in the Fifth Bituminous Mining District for the year ending December 31, 1887.

NAMES OF COLLERIES.	Location.	Total production in tons of coal.	Total production in tons of coke.	Total shipment in tons of coal.	Number days worked.	Number persons employed	Number fatal accidents.	Number non-fatal accidents.	Number kegs of powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives	Number coke ovens.
Anchor,	Dunbar, Fayette county,	36,720	28,000	. . . . .	200	97	. . .	. . .	3	5	9	. .	100
Atlas,	do. do.	48,376	31,166	. . . . .	221	73	. . .	. . .	. . .	4	8	. .	80
Buffalo,	Garrett, Somerset county,	4,649	225	4,152	135	33	. . .	. . .	25	1	6	. . .	6
Berlin,	Berlin, Somerset county,	5,006	. . . . .	4,482	200	10	. . .	. . .	24	. . .	3	. . .	. . .
Clinton,	Owensdale, Fayette county,	17,780	12,290	. . . . .	194	35	. . .	. . .	85	2	3	. . .	44
Coal Brook,	Coal Brook Works, Fayette county,	41,783	28,436	. . . . .	248	53	1	. . .	. . .	1	7	. . .	70
Clarissa,	Vanderbilt, Fayette county,	58,520	34,240	. . . . .	231	74	. . .	1	. . .	. . .	6	. . .	108
Cora,	Jimtown, Fayette county,	21,852	15,657	240	233	43	. . .	. . .	40	1	3	. . .	42
Casselman,	Garrett, Somerset county,	40,000	. . . . .	40,000	300	41	. . .	. . .	250	1	4	. . .	. . .
Cochrau,	West Salisbury, Somerset county,	8,223	. . . . .	8,223	159	10	. . .	. . .	. . .	. . .	1	. . .	. . .
C. & E. L. C. C.,	Myersdale, Somerset county,	73,056	22,380	39,285	212	123	. . .	3	. . .	. . .	8	. . .	75
Cumberland,	Grassy Run, Somerset county,	60,000	. . . . .	58,580	. . .	71	. . .	1	500	. . .	4	. . .	. . .
Co-operative	do. do.	13,000	. . . . .	13,000	150	26	. . .	. . .	. . .	. . .	2	. . .	. . .
Conuellsville Shaft and Plumer,	Connellsville, Fayette county,	184,500	119,620	. . . . .	309	267	1	3	400	12	30	. . .	296
Diamond,	McClure Station, Fayette county,	32,995	19,797	. . . . .	223	39	. . .	. . .	. . .	. . .	5	. . .	66
Dexter,	West Overton Station, Fayette county,	16,524	11,479	. . . . .	209	31	. . .	. . .	95	. . .	3	. . .	40
Eagle,	Sherrick Station, Fayette county,	45,000	30,000	. . . . .	272	71	. . .	. . .	. . .	. . .	7	. . .	80
Fouudry,	do. do.	63,000	42,000	. . . . .	272	94	. . .	. . .	. . .	. . .	9	. . .	97
Fountain,	Scottdale Station, Fayette county,	25,293	18,296	. . . . .	187	66	. . .	. . .	. . .	1	13	. . .	87
Furnace,	do. do.	4,600	1,775	. . . . .	50	15	. . .	. . .	. . .	. . .	2	. . .	87
Frick,	Broad Ford, Fayette county,	63,000	42,000	. . . . .	275	49	. . .	. . .	. . .	. . .	6	. . .	106
Franklin,	Owensdale, Fayette county,	22,618	15,830	. . . . .	225	36	. . .	. . .	112	1	3	. .	50
Fort Hill,	Fort Hill Station, Fayette county,	85,539	57,026	. . . . .	279	107	. . .	. . .	. . .	1	10	. . .	140
Fairchance,	Fairchance, Fayette county,	48,254	25,515	5,455	241	76	. . .	. . .	371	. . .	13	. . .	80
Flog Hill,	Grassy Run, Somerset county,	30,050	. . . . .	30,000	195	46	. . .	. . .	310	. . .	3	. . .	. . .
Fair View,	do. do.	20,000	. . . . .	19,000	195	28	. . .	1	210	. . .	3	. . .	. . .
Fayette,	Oliphant Station, Fayette county,	74,095	40,125	2,955	254½	108	. . .	. . .	. . .	4	6	. . .	130
Grace,	Moyer Station, Fayette county,	128,044	76,826	. . . . .	225	311	. . .	. . .	700	4	22	. . .	357
Great Bluff,	Dunbar, Fayette county,	5,652	4,431	12	130	15	. . .	. . .	. . .	. . .	2	. . .	16
Grassy Run,	Grassy Run, Somerset county,	12,600	. . . . .	12,600	173	18	. . .	. . .	100	. . .	1	. . .	. . .
Henry Clay,	Broad Ford, Fayette county,	60,000	40,000	. . . . .	275	92	. . .	. . .	. . .	6	10	. . .	100
Hill Farm,	Dunbar, Fayette county,	88,422	49,148	. . . . .	303	75	. . .	. . .	. . .	6	8	. . .	111

Home,	Valley Station, Fayette county,	11,303	8,899	345	238	13	...	...	5	...	1	...	20
Hoblitzel,	Berlin Branch, Somerset county,	.....	.....	.....	...	...	...	...	...	...	...	...	.....
Hamilton,	Grassy Run, Somerset county,	23,185	.....	33,185	120	34	...	...	...	...	2	...	.....
Hocking,	do. do.	7,168	.....	7,168	101	10	...	...	...	...	1	...	.....
Jackson,	Dawson, Fayette county,	27,000	18,000	.....	235	44	...	...	...	1	5	...	64
Kyle Farm,	Fairchance, Fayette county,	48,435	31,818	90	170	112	...	...	...	1	10	...	117
Keystone,	Meyersdale, Fayette county,	15,900	.....	13,900	228	30	...	...	...	...	4	...	.....
Leith,	Leith Station, Fayette county,	120,000	80,000	.....	204	298	...	...	...	10	24	...	284
Lemont,	Lemont Furnace, Fayette county,	78,000	45,000	.....	275	110	...	1	...	4	10	...	120
Leisenring No. 1,	Leisenring, Fayette county,	181,626	121,812	.....	158½	467	...	1	...	9	35	...	501
Leisenring No. 2,	West Leisenring, Fayette county,	194,578	129,026	.....	232½	408	2	7	...	8	27	...	500
Mahoning,	Dunbar, Fayette county,	63,893	42,927	5,335	229	93	...	...	...	9	7	...	100
Morrell,	Morrell, Fayette county,	237,165	157,070	.....	230	385	...	2	...	6	33	...	400
Morgan,	Morgan Station, Fayette county,	.....	.....	.....	...	...	...	...	...	...	...	...	.....
Mt. Braddock,	Mt. Braddock, Fayette county,	17,000	13,000	.....	150	55	...	...	...	6	6	...	80
Nellie Shaft and Nellie Drift,	Vanderbilt, Fayette county,	100,050	70,409	.....	231	188	1	...	...	2	13	...	254
Painter,	McClure Station, Fayette county,	111,636	74,424	.....	223	167	...	...	...	2	24	1	228
Pennsville,	Pennsville, Fayette county,	38,683	25,789	.....	186	74	...	...	...	3	4	...	92
Percy,	Percy Coke Works, Fayette county,	37,782	17,678	9,428	222	77	...	...	...	2	5	...	62
Parrish,	Ferguson Station, Fayette county,	43,021	25,438	.....	244	53	...	...	...	4	4	...	70
Paul,	Vanderbilt, Fayette county,	10,000	6,666	.....	50	66	...	...	...	1	9	...	83
Philson,	Berlin Branch, Somerset county,	.....	.....	.....	...	...	...	...	...	...	...	...	.....
Redstone,	Brownfield Station, Fayette county,	223,880	149,253	.....	235	523	...	3	...	9	33	...	446
Rist,	Broad Ford, Fayette county,	112,500	75,000	.....	273	133	...	2	...	2	18	...	165
Rolling Mill,	Fayette county,	.....	.....	.....	...	21	...	1	...	...	5	...	.....
Rainbow,	Rainbow Station, Fayette county,	33,000	.....	33,000	310	57	...	1	350	1	5	...	.....
Summit No. 1 and 2,	Summit Station, Fayette county,	102,000	68,000	.....	274	119	...	...	...	...	13	...	142
Sterling No. 1,	Jimtown, Fayette county,	182,600	147,000	100	237	309	...	...	400	3	38	...	394
Sterling No. 2,	Baltimore & Ohio Railroad, Fayette county,												
Stewart,	Evans Station, Fayette county,	86,357	6[illegible],073	.....	265	140	...	1	...	3	3	...	120
Salisbury,	West Salisbury, Somerset county,	.....	.....	.....	...	...	...	...	...	...	...	...	.....
Statler,	Grassy Run, Somerset county,	10,000	.....	10,000	200	26	1	...	120	...	2	...	.....
Tip Top,	Valley Station, Fayette county,	75,000	50,000	.....	275	104	...	...	...	1	12	...	121
Tyrone,	Broad Ford, Fayette county,	94,018	59,706	540	309	83	...	3	200	1	16	...	146
Tub Mill Run,	Salisbury Branch, Somerset county,	42,000	.....	40,000	195	56	...	...	400	...	4	...	.....
Thomas,	do. do.	7,845	.....	1,500	238	21	...	...	78	...	1	...	.....
Trotter,	Trotter, Fayette county,	337,500	225,000	.....	269	461	1	1	...	6	42	...	464
Union,	Smocks Station, Fayette county,	24,331	.....	22,203	285	47	...	...	230	...	5	...	.....
Uniondale,	Dunbar, Fayette county,	26,619	18,754	.....	198	83	...	...	1	3	6	...	74
Valley,	Valley Station, Fayette county,	105,000	70,000	.....	271	174	...	1	...	3	18	...	152
Wheeler,	Wheeler, Fayette county,	64,069	40,947	.....	234	112	...	...	...	4	9	...	100
White,	Morgan Station, Fayette county,	114,000	76,000	.....	271	172	...	...	...	...	18	...	200
Wynn,	Wynn Coke Works, Fayette county,	11,913	6,076	1,223	99	59	...	...	...	1	4	...	70
Youngtown,	Youngstown Station, Fayette county,	107,399	73,457	.....	214½	280	1	1	125	9	25	...	240
Total,	.....	4,563,657	2,755,394	406,001	...	7,902	8	34	...	164	725	1	8,090

TABLE No. 3.—Showing the number of each class of employés at each colliery in the Fifth Bituminous Mine District during the year 1887.

NAMES OF COLLIERIES.	LOCATION—COUNTY.	NUMBER OF PERSONS EMPLOYED INSIDE.							NUMBER OF PERSONS EMPLOYED OUTSIDE.							Grand totals—inside and outside.
		Inside foreman or mine boss.	Miners.	Miners' boys.	All company men.	Drivers and runners.	Doorboys and helpers.	Total inside.	Outside foremen.	Blacksmiths and carpenters.	Engineers and firemen.	Cokers and yardmen.	All company men.	Superintendent, bookkeepers and clerks.	Total outside.	
Anchor,	Dunbar, Fayette,	1	34	. . .	5	4	2	46	. . .	2	3	36	6	4	51	97
Atlas,	do. do.	1	31	2	2	3	. . .	39	1	1	3	26	2	1	34	73
Buffalo,	Garrett, Somerset,	. . .	20	. . .	. . .	4	. . .	24	. .	2	1	2	2	2	9	33
Berlin,	Berlin, do.	1	8	. . .	. . .	1	. . .	10	. . .	. . .	. . .	. . .	. . .	. . .	. . .	10
Clinton,	Owensdale, Fayette,	1	14	. . .	1	2	. . .	18	. . .	. . .	1	13	2	1	17	35
Coal Brook,	Coal Brooks Works, Fayette,	1	25	. . .	. . .	4	. . .	30	. . .	2	. . .	20	. . .	1	23	53
Clarissa,	Vanderbilt, do.	1	40	. . .	. . .	6	. . .	47	1	1	. . .	23	. . .	2	27	74
Cora,	Jimtown, do.	1	15	2	. . .	2	. . .	20	1	. . . .	1	19	. . .	2	23	43
Casselman,	Garrett, Somerset,	1	30	3	. . .	4	. . .	38	1	. . . .	1	. . . .	. . .	1	3	41
Cochran,	West Salisbury, Somerset,	. . .	9	. . .	1	. . .	. . .	10	. . .	. . . .	. . .	. . . .	. . .	. . .	. . .	10
C. and E. L. Coal Company Mine,	Meyersdale, do.	1	71	7	2	7	2	90	1	1	. . .	23	6	2	33	123
Cumberland,	Grassy Run, do.	1	50	10	. . .	4	2	67	. . .	1	. . .	. . . .	2	1	4	71
Co-operative,	do. do.	1	22	. . .	. . .	2	. . .	25	. . .	. . .	. . .	. . . .	. . .	1	1	26
Connellsville Shaft and Plumer,	Connellsville, Fayette,	2	114	3	13	15	9	156	. . .	6	8	58	37	2	111	267
Diamond,	McClure Station, Fayette,	1	18	. . .	. . .	3	. . .	22	. . .	. . .	. . .	16	. . .	1	17	39
Dexter,	West Overton Station, Fayette,	1	14	. . .	. . .	2	. . .	17	. . .	. . .	. . .	13	. . .	1	14	31
Eagle,	Sherrick Station, do.	. . .	23	. . .	2	4	. . .	29	1	1	. . .	35	4	1	42	71
Foundry,	Sherrick Station, do.	1	32	. . .	3	7	1	44	1	1	1	44	2	1	50	94
Fountain,	Fayette county,	1	30	1	2	6	. .	40	1	1	1	17	4	2	26	66
Furnace,	do. do.	. . .	8	. . .	. . .	1	. . .	9	. . .	. . .	. . .	5	. . .	1	6	15
Frick,	Broad Ford, Fayette,	1	15	. . .	1	3	1	21	. . .	. . .	. . .	22	5	1	28	49
Franklin,	Owensdale, do.	1	14	. . .	. . .	2	. . .	17	1	. . . .	1	14	2	1	19	36
Fort Hill,	Fort Hill Station, Fayette,	1	40	3	. . .	9	. . .	53	. . .	1	. . .	50	1	2	54	107
Fairchance,	Fairchance, do.	1	35	. . .	1	8	. . .	45	1	2	1	23	1	3	31	76
Flog Hill,	Grassy Run, Somerset,	1	30	6	. . .	4	. . .	41	. . .	. . .	. . .	. . .	3	2	5	46
Fair View,	do. do.	. . .	15	4	2	2	. . .	23	. . .	1	. . .	. . .	2	2	5	28
Fayette,	Oliphant Station, Fayette,	1	45	1	5	6	2	60	1	2	3	35	4	3	48	108
Grace,	Moyer Station, do.	1	140	. . .	4	12	. . .	157	1	4	5	130	7	7	154	311
Great Bluff,	Dunbar, do.	. . .	6	. . .	. . .	2	. . .	8	1	. . . .	. . .	4	. . .	2	7	15

Grassy Run,	Grassy Run, Somerset,	1	16			1		18									
Henry Clay,	Broad Ford, Fayette,	1	35	3	5	6	1	51	1		3	31	5	1	41	92	
Hill Farm,	Dunbar. do.	1	33	4		5	2	45		4	3	21		2	30	75	
Home,	Valley Station, do.		6			1		7				5		1	6	13	
Hoblitzel,	Berlin Branch, Somerset,																
Hamilton,	Grassy Run, do.	1	29	1		2		33					1		1	34	
Hocking,	do. do.		9			1		10								10	
Jackson,	Dawson, Fayette,	1	18	2		3	1	25	1	1		16		1	19	44	
Kyle Farm,	Fairchance, Fayette,	1	50		2	6	1	60	1	1	1	44	3	2	52	112	
Keystone,	Meyersdale, Somerset,	1	16	1		4		22		2	2		3	1	8	30	
Leith,	Leith Station, Fayette,	1	130		28	20	10	184	1	5	8	89	9	2	114	298	
Lemont,	Lemont Furnace, Fayette,	1	40	2	5	6	2	56	1	2	6	40	2	3	54	110	
Leisenring No. 1,	Leisenring, do.	1	188	8	19	27	15	258	1	9	6	152	31	10	209	467	
Leisenring No. 2,	West Leisenring, do.	1	172	2	19	23	15	232	1	8	5	110	19	3	176	408	
Mahoning,	Dunbar, do.	1	39	3	4	4	1	52		2	5	32		2	41	93	
Morrell,	Morrell, do.	1	160	10	21	24	2	218	1	8	4	150	2	2	167	385	
Morgan,	Morgan Station, do.																
Mt. Braddock,	Mt. Braddock Station, Fayette,	1	20		2	3		26		2	4	20	1	2	29	55	
Nellie Shaft and Nellie Drift,	Vanderbilt, do.	2	90		4	11		107	1	2	3	72	1	2	81	188	
Philson,	Berlin Branch, Somerset,																
Painter,	McClure Station, do.	1	70			14	2	87		3	2	70	2	3	80	167	
Pennsville,	Pennsville, do.	1	30		1	3	1	36	1	2	1	30	2	2	38	74	
Percy,	Percy Coke Works, do.	1	30	3	2	3	3	42	1	1	2	25	4	2	35	77	
Parrish,	Ferguson Station, do.		25	3		2	2	32		2	2	15		2	21	53	
Paul,	Vanderbilt, do.		32		2	7		41		3	1	18	2	1	25	66	
Redstone,	Brownfield Station, do.	1	210		31	24	22	288	1	8	10	200	7	9	235	523	
Rist,	Broadford, do.	1	62	4	4	10	2	83	1	2	3	40	7	2	55	138	
Rolling Mill,	Somerset county,	1	12	1		5		19					2		2	21	
Rainbow,	Rainbow Station, Somerset,	1	40	3	1	4		49	1	1	1		2	3	8	57	
Summit Nos. 1 and 2,	Summit Station, do.	1	45	7	2	9		64	1	1	1	48	3	1	55	119	
Sterling No. 1,	Jimtown, Fayette,	2	130	9	12	19	2	174	2	17	2	100	10	4	135	309	
Sterling No. 2,	On B. & O. R. R., Fayette,																
Stewart,	Evans Station, do.	1	50		12	7	2	72	1	2	4	55	4	2	68	140	
Salisbury,	West Salisbury, Somerset,																
Statler,	Grassy Run, do.	1	20	1	1	1		24	1					1	2	26	
Tip Top,	Valley Station, Fayette,	1	47	5	2	7		62	1	1	1	30	8	1	42	104	
Tyrone,	Broad Ford, do.	1	32	10	2	5		50	1	1		24	6	1	33	83	
Tub Mill Run,	Salisbury Branch, Somerset,	1	36	7		4	1	49		1			4	2	7	56	
Thomas,	do. do. do.	1	15	2		1		19	1					1	2	21	
Trotter,	Trotter, Fayette,	1	190	4	23	24	11	253	1	6	4	160	34	3	208	461	
Union,	Smocks Station, Fayette,	1	35			2		38		1			5	3	9	47	
Uniondale,	Dunbar, do.	1	29		5	2	1	38	1	1	2	34	6	1	45	83	
Valley,	Valley Station, do.	1	70	7	9	6	7	100	1	2	4	54	12	1	74	174	
Wheeler,	Wheeler, do.	1	30	8	15	6	2	62	1	2	3	40	3	1	50	1 2	
White,	Morgan Station, do.	1	72		5	11		89	1	1		76	4	1	83	172	
Wynn,	Wynn Coke Works, Fayette,	1	25			2		29		2	1	24		3	30	59	
Youngstown,	Youngstown Station, do.	1	111	2	46	10	9	179	1	2	8	69	15	6	101	280	
Total,		61	3,448	154	323	464	136	4,589	41	137	132	2,552	311	140	3,313	7,902	

TABLE No. 4.—List of fatal accidents occurring in and about the mines of the Fifth Bituminous Mine District, for the year ending December 31, 1887.

Date of accident.	Name of Person.	Occupation.	Age.	Widow	No. of orphans.	Name of Colliery. Location—County.	Nature and cause of accident.
Jan. 12,	Carl Vicer, ...	Miner, ...	27	1	1	Trotter, Fayette county, ...	Crushed between cars; died in five hours.
Feb. 19,	Andrew Turley, ...	Boss driver, . . .	25	1	. .	Leisenring No. 2, Fayette county, ...	Killed by falling down a shaft.
April 16,	Paul Nagle, ...	Miner, ...	45	1	3	Plumer, Connellsville, Fayette county, ...	Died from suffocation in a burning mine.
July 6,	Jacob Bacchus, ...	Miner, ...	43	. . .	. . .	Statler, Grassy Run, Somerset county, ...	Killed by a fall of coal.
Nov. 5,	Charles Teigh, ...	Miner, ...	21	. . .	. . .	Youngstown, Youngstown, Fayette county, . .	Killed by a fall of roof.
28,	Alphonso Delplato, ...	Miner, ...	25	. . .	. . .	Nellie Shaft, Vanderbilt, Fayette county, ...	Killed by being struck on the head while being hoisted from the mine.
Dec. 1,	Fritz Bozzia, ...	Miner boy, ...	14	. . .	. . .	Coalbrook, Coalbrook, Fayette county, ...	Fatally injured by being run over by an empty wagon; his arm was broken and had to be amputated, and he has since died.
28,	Henry Beadle, ...	Miner, ...	40	. . .	. . .	Leisenring No. 2, West Leisenring, Fayette co.,	Killed by a fall of coal and slate while drawing a stump in No. 5 Butt North He and Nicholas Cunningham were working together, they heard the place working, and Beadle, in trying to escape, was caught and killed instantly.

TABLE No. 5.—List of non-fatal accidents occurring in and about the mines of the Fifth Bituminous Mine District, for the year ended December 31, 1887.

Date of accident.	Name of Person.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Jan. 19,	Louis Buttermore,	Miner,	37	M.		Plumer,	Connellsville, Fayette,	Body injured by fall of slate.
24,	John Fenuy,	Driver,	28	M.		Leisenring No. 1,	Leisenring, Fayette,	Body squeezed when coupling loaded cars.
31,	Isaac Harberger,	do.				Stewart,	Stewart Coke Works, Fayette,	Leg broken by car jumping the track.
Feb. 1,	Thomas Jenkins,		16			Leisenring No. 2,	West Leisenring, Fayette,	Knee injured by pit wagons.
3,	William Hugland,		20	S.		do.	do. do.	Kicked by a mule and seriously hurt.
18,	Sylvester Gray,	Trapper,	15	S.		Youngtown,	Youngstown, Fayette,	Leg aud collar-bone broken by cars on slope.
19,	William Burg,	Driver,	24	M.		Plumer,	Connellsville, Fayette,	Leg bruised by falling in front of moving wagons.
25,	John Potter,	do.	28	M.		Leisenring No. 2,	West Leisenring, Fayette,	Foot injured by wagou jumping track.
Mar. 3,	Thomas Smith,	do.	20	S.		do.	do. do.	Breast-bone injured by wagon.
Apr. 1,	Edward Brown,	Miner,	27	M.		do.	do. do.	Finger cut off by a piece of slate falling.
30,	Charles Reed.					Rolling Mill Mine,	Everson, Fayette,	Foot injured by jumping on loaded wagon.
May —,	Jonathan Bell,	Driver,	21			Leisenring No. 2,	West Leisenring, Fayette,	Injured by being squeezed between wagon and door.
19,	W. T. Speker,	Miner,	34	M.		Cumberland,	Grassy Run, Somerset,	Body bruised by fall of breast coal.
June 14,	Paul Sapoorack,	do.	23	S.		Trotter,	Trotter, Fayette,	Leg broken by roof falling while loading wagon.
28,	John Ormsby,	do.	32	M.		Valley,	Valley, Fayette,	Leg injured while at work in his room.
July 19,	William Rowe,	do.	24	M.		Lemont,	Lemont, Fayette,	Arm injured while helping to get a trip started.
28,	George Hostafel,	do.	44	S.		Tyrone,	Broad Ford, Fayette,	Squeezed between wagon and post in room.
28,	John Chasler,	Driver,	37	M.		do.	do. do.	Foot injured by being caught under the wheel while coupling cars.
Aug. 6,	Joseph Weaver,	Miner,	50	M.		Rainbow,	Rainbow Station, Fayette,	Injured by a fall of slate.
9,	John T. Jones,	do.	56	M.		Morrell,	Morrell, Fayette,	Lost an eye by being hit with a pick while at work.
30,	John Polecobler,	do.	28	M.		Redstone,	Brownfield Station, Fayette,	Leg broken by fall of slate.
Sept. 3,	Michael Brady,	do.	31	M.		Davidson Shaft	Connellsville, Fayette,	Leg broken aud head injured by fall of roof coal.
13,	Robert Beddis,	do.	36	M.		C. & E. L. C. Co. Mine,	Summit township, Somerset,	Foot hurt by fall of breast coal.
26,	John C. Race,	do.	30	M.		do. do.	do. do.	Foot hurt by fall of breast coal.
21,	James Farmer,	Lamp tender,	13	Boy,		Morrell,	Morrell, Fayette,	Leg broken while riding on trip of cars.
Oct. 8,	Edward Smalley,	Tipple man,	23	S.		Redstoue.	Brownfield, Fayette,	Injured by falling from tipple.
21,	John Anderson,	Miner,	27			Leisenring No. 2,	West Leisenring, Fayette,	Leg bruised by fall of slate.
28,	August Grouse,	do.	30	M.		C. & E. L. C. Co. Mine,	Summit township, Somerset,	Foot hurt by a fall of breast coal.

TABLE No. 5.—Continued.

Date of accident.	Name of Person.	Occupation.	Age.	Married.	No. of children.	Name f Celliery.	Locatlen—County.	Nature and Cause of Accident.
Oct. 29,	James Cross, ...	Miner, ...	. . .	M.	. . .	Fair View, ...	Grassy Run, Semerset, ...	Head and back bruised by fall of top coal.
Nov. 1,	John Baldwin, ...	. . . . .	15	Boy,	. . .	Rist, ...	Broad Ford, Fayette, ...	Leg broken by jumping on trip passing down slope.
21,	Allen Hager, ...	Driver, ...	20	S.	. . .	Clarissa, ...	Vanderbilt, Fayette, ...	Hurt by by falling in front of pit car.
26,	Bartholomew Clark, . .	Miner, ...	51	M.	. . .	Tyrone, ...	Broad Ford, Fayette, ...	Hips and one leg broken by fall of slate.
28,	John Hart, ...	. . . . .	40	M.	. . .	Rist, ...	do. do.	Arm and nose broken by falling from trestle.
Dec. 31,	John Lalley, ...	Miner, ...	42	M.	. . .	Redstone, ...	Brownfield, Fayette, ...	Back injured by fall of slate.

SIXTH BITUMINOUS DISTRICT.

Hon. THOMAS J. STEWART,

Secretary of Internal Affairs:

SIR:. In compliance with section ten of the act "relating to bituminous coal mines," I have the honor of presenting herewith my annual report for the year ending December 31, 1887:

The production of coal for the year was 3,341,381 tons, an increase over 1886 of 265,961 tons.

The number of accidents were nineteen, seven of which proved fatal. I regret very much that this shows somewhat of an increase over that of 1886. I attribute the cause of this increase of accidents to an unusual degree of recklessness by miners, in undermining their coal and in not spragging it up to protect themselves.

It will be noticed that, of the nineteen accidents which occurred, eleven of them were caused by falls of coal, four of which proved fatal, and of those eleven accidents I found from my personal examinations and reports from the mine bosses, that no less than eight could have been prevented had the victims themselves taken proper precautions.

Causes of fatal and non-fatal accidents:

Fatal.		
By falls of coal,	4	
By mine wagons,	2	
By a blast,	1	
Total,		7
Non-Fatal.		
By falls of coal,	7	
By mine wagons,	5	
Total,		12
Total of fatal and non-fatal accidents,		19
Number of widows caused by fatalities,		3
Number of orphans caused by fatalities,		5

Mining Statistics.

Number of mines in the district in 1886,	76
Number opened during the year,	13
Number worked out during the year,	4
Total now in the district,	85
Number of shafts,	10
Number of slopes,	10
Number of drifts,	65
Number idle during the year,	10
Number employing only nine men and not reported,	6
Total number of mines reported,	69
Number of persons employed inside,	4,887
Number of persons employed outside,	1,191
Total inside and outside,	6,078
Number of horses and mules,	611
Number employed per fatal accident,	698
Number employed per non-fatal accident,	407
Total production in tons of coal,	3,341,381
Number of tons mined per fatal accident,	477,340
Number of tons mined per non-fatal accident,	278,448
Number of coke ovens,	2,341
Total production in tons of coke,	774,529

Enclosed please find a small map of the Lemon mine on a scale of 400′ to the inch, for the report.

Yours respectfully,

J. T. EVANS,
Mine Inspector.

JOHNSTOWN, PA.,
February 6, 1888.

Clearfield and Cambria County Mines.

The location of which are along and adjacent to the Bell's Gap railroad. Those mines have been greatly improved during the past year in their sanitary conditions. There seems to be a desire in those having charge of the mines to have them fully up to the requirements of the law. There are eight mines on the road, four of them at Coalport and three at Mountaindale, and one at or near Irvona. The last, the "National," has only been opened during the past year, 1887, and promises to be the largest mine on the road. The ventilation is produced by a fan.

Cambria County Mines.

There are two mines located at Johnstown—the Conemaugh and the Cushon. The ventilation and drainage are good.

The next group of mines is located at South Fork. There are seven mines at this point, all of which, except one, are working on

the double-heading system, and are kept in good condition. The Diamond mine, which is worked on the single-heading plan, I found, upon my last examination, to be rather defective in ventilation. Furnaces are used in those mines to produce ventilation, except in the Webster No. 3, which has two fans in operation, one for each side of the mine. The coal is hauled from this mine by machinery, the rope extending into the mine a distance of about 2,000 feet. The fans are placed each side of this main opening, above a shaft. The air is then driven direct to the men, after which both currents meet and return through the main road.

The next group of mines in this county is located at Portage. There are three mines here that come under the provisions of the law. The condition of those are fair. The Martindale slope has improved their ventilation greatly by putting in a fan, which gives them a good current of air, going into the mine, and only needs now a proper distribution to put the mine in the best of condition.

The next group of mines are at Ben's Creek—four in number. Those mines have also been greatly improved during the past year, yet there is still room for further improvement before they are up to the standard. There has been a fan put in at Sonman shaft to ventilate the mines. This has greatly improved their sanitary condition, and it only requires proper attention by the mine-boss to keep the mine in good condition.

The next group of mines are located at Lilly. There are three mines here, one of which is working on the double-heading plan. The standard condition of this mine is generally good. The Sonman No. 2 was also in a fair condition, upon my last examination. But the system upon which this mine is worked is very deleterious to the ventilation so that when the work becomes advanced to any great distance, it becomes almost an impossibility to get air to the face of the mines. The Dysert No. 1 mine I found to be very defective in its ventilation when I examined in November last, that being my first trip to this mine, it having but recently come under the provisions of the law. I at once notified the superintendent to make some changes which I considered would improve the ventilation, which was attended to at once, and afterwards reported to me as having improved the ventilation very much.

The *Gallitzen slope* and *Gallitzen shaft*, two of the largest mines in the district, both of which are in very good condition. Fans are used in those mines to produce ventilation and double-heading system of mining, with separate splits of air for each section of work.

Blair County Mines.

There are in this county seven mines, all but one of which are now worked on the double-heading system, and each section of work ventilated separate. The Porter shaft is still on the old style of single-

heading The ventilation was found here to be very defective at the face of the mine. I notified the superintendent at once and requested him to make some changes. He did so at once, and in the course of a week wrote me and reported the ventilation very much improved.

The *Lemon mine*, which is located at this place, Bennington, has adopted what I consider the model plan of ventilating. There are in this mine five sections of work, each section being ventilated separately, and this is done without the use of a single door in the mine. I think that it is a step in the right direction to put in an overcast wherever it is possible, as they are much cheaper and give better results by far in the long run. I think it will only be a matter of time until men will see the economy of opening their mines in such a way that overcasts can be used and do away with the use of doors, except in rare cases.

Huntingdon and Bedford County Mines.

These mines are operated in the Broad Top Coal field, which is a very peculiar formation, there being nothing in the State similar to it, except the Anthracite Coal-field on a very much larger scale. This causes it to be one of the most difficult coal-fields in the State to mine. The quality of the coal is good. There are in this region thirteen mines, located as follows: Prospect, Benedict, Ocean, Moredal, Fisher and Huntingdon at Dudley, and Maher, Duval, Brown and Mt. Equity at Six Mile Run, and Cambria and Cherington at Sandy Run. All of which ship their products over the Broad Top and Huntington railroad. There is one other mine in this region, located at Robertsdale, and operated by the Rockhill Coal and Iron Company, who have a road of their own (narrow gauge), running from Mount Union up to the mines, a distance of twenty-eight miles. This mine is in good condition, and as far as can be carried out in this coal-field, their system of mining is double heading.

Those mines located at Dudley are in very fair condition, except the Prospect and Benedict, those two mines are somewhat neglected in their ventilation and drainage, and are now in such a condition that each of them requires a new air shaft at or near the face of their workings before they can be put in good order as to ventilation. Both of these mines are at present idle.

The Bedford county mines are at Six Mile Run, four of them are in reasonably good condition, except the Maher mine. The ventilation here, on my last examination, was very defective; since then it has been reported to me as much improved. Brown mine is now ventilated by a furnace which is incapable of doing the work; they now propose to put in a fan.

The Cambria and Cherington mines, located at Sandy Run, are in reasonably good condition.

Westmoreland and Indiana County Mines.

There are in Westmoreland county nine mines belonging to the Sixth District, and one in Indiana county, that come regularly under the law, all of which mine their coal from the Pittsburgh bed or seam, and are kept in very good condition at present. Some of them have been completely revolutionized in their condition during the last year. There is in Indiana county, as has been stated, but one mine that comes under the provisions of the law, namely, Foster mine, which is located at Avenmore Station. This mine is in the very best condition at all times, being fully up to the requirements of the mining law.

There are three other mines in this county that only employ about nine men; consequently were not examined by me.

General Condition of Mines.

In reviewing this subject it is very gratifying to me to state that the general condition of the mines have been greatly improved during the year 1887, and that the improvements that have been made are of such a character that there is some stability attached to them. They are such as replacing furnaces with fans, double headings adopted in place of single, large air-ways instead of small ones, ventilating the mine in sections, in place of one continual current, etc.

Coal shipped from mines along main line of Pennsylvania railroad,	1,295,000
Coke shipped from mines along main line of Pennsylvania railroad,	457,837
Total amount shipped in tons of coal and coke,	1,752,837
Coal shipped from mines along Broad Top and Huntingdon railroad,	266,483
Coke shipped from mines along Broad Top and Huntingdon railroad,	18,000
Total amount shipped in tons of coal and coke,	284,483
Coal shipped from mines along Bell's Gap railroad.	213,700
Coke shipped from mines along Bell's Gap railroad,	43,650
Total amount shipped in tons of coal and coke,	257,350
Coal shipped from mines on West Penn railroad,	196,000
Coke shipped from mines on West Penn railroad,	172,000
Total shipped in tons of coal and coke,	368,000

Coal shipped from mine on Cresson and Coalport railroad,	1,345
Coke shipped from mine on Cresson and Coalport railroad,	4,110
Total shipped in tons of coal and coke,	5,455
Total amount of coal shipped to and over main line Pennsylvania railroad,	1,972,528
Total amount of coke shipped to and over main line Pennsylvania railroad,	717,597
Grand total of coal and coke shipped to and over Pennsylvania railroad in tons,	2,690,125

J. T. EVANS,
Mine Inspector.

List of mine-bosses, with names of mines of which they are in charge in the Sixth Bituminous District:

J. F. Evans, Mine Inspector.

David F. Jones,	Argyle mine.
Frederick Croyle,	Aurora mine.
John Bradley,	Bennington Slope mine.
Jame Eagan,	Beach Grove mine.
Wilmur Reed,	Benedict mine.
William Powell,	Brown mine.
John Leap,	Ben's Creek Plane mine.
Thomas Caddy,	Cushon mine.
Frank Spotts,	Conemaugh mine.
Thomas Forsyth,	Cambria mine.
Joseph Camble,	Cheveington mine.
Lee Ott,	Conrad Shaft mine.
James Jenkins,	Duval mine.
G. L. Duncan,	Delaney mine.
Caron Leahy,	Dysert No. 1 mine.
Thomas Leahy,	Dysert No. 2 mine.
Wendle Croyle,	Euclid mine.
Frank Grimes,	Elderado mine.
Luther Given,	Eagle mine.
J. M. Johnston,	Foster mine.
J. F. Griffiths,	Fenn mine.
Richard Bowen,	Frugality mine.
William Roda,	Gallitzen Shaft mine.
John Cann,	Great Bend No. 1 mine.
William Bell,	Great Bend No. 2 mine.
William H. Ambler,	Glen White mine.
James Smith,	Gallitzen Slope mine.

Charles Reilly, ... Horse Shoe mine.
Morris J. Lewis, ... Isabella mine.
John McNulty, ... Irvona mine.
J. Moody, ... Loyalhanna Shaft mine.
Alexander Snedden, ... Latrobe Coal Works mine.
Phelix Tool, ... Moshannon mine.
John Morrison, ... Millwood Shaft mine.
. . . . . Monastry Slope mine.
John C. Dovey, ... M. Saxman mine.
John Watt, ... Martindale Slope mine.
Roda Maher, ... Maher mine.
John Mitchel, ... Mount Equity mine.
William Keller, ... National mine.
William Wright, ... Oakland mine.
William Sweet, ... Ocean mine.
John Leonard, ... Porter Shaft mine.
Scott Reed, ... Prospect mine.
Charles Comers, ... Robertsdale mine.
Jacob Shanifelt, ... Ridge View mine.
P. S. Slairn, ... St. Clair mine.
Joseph Smittle, ... Smittle mine.
William W. Watkins, ... J. C. Stineman mine.
John McIntyre, ... South Fork mine.
Martin Mayer, ... Sonman No. 2 mine.
Daniel Leahy, ... Sonman No. 1 mine.
William McKee, ... Sonman Shaft mine.
Edward Edwards, ... Standard mine.
J. L. Smith, ... Smith mine.
J. M. Turner, ... Turner mine.
John Watson, ... Tipton mine.
James Ward, ... Webster No. 3 mine.
Harvey Meass, ... Mount Vernon No. 4 mine.
Thomas A. Jones, ... Moredale mine.
David A. Jonston, ... Columbia mine.
John Loyd, ... Fisher mine.
Reuben Ott, ... Buffalo mine.
John Daniels, ... Lemon mine.

TABLE 1—Showing location of collieries in the Sixth Bituminous Mine District.

Name of Colliery.	Name of Operator.	Location—County.	Name of Superintendent.	Postoffice Address.
Argyle,	Huff & Colter,	Cambria,	J. P. Willson,	South Fork, Cambria county.
Aurora,	Herst & Luke,		D. W. Luke.	
Blain Run,	Great Bend Coal Company,	Clearfield,	John E. Bell,	Bellwood, Blair county.
Blairsville,	Jacob Graff,	Indiana,	Jacob Graff,	Blairsville, Indiana county.
Beach Grove Coal Company,	Beach Grove Coal Company,	Blair,	Martin Meagher,	Gallitzen, Cambria county.
Bennington Slope,	Blair Coal and Iron Company.			
Benedict,	Reed Brothers,	Huntingdon,	William Reed,	Dudley, Huntingdon county.
Brown,	Sweet & Brown,	Bedford,	William Sweet,	Saxton, Bedford county.
Ben's Creek Plane,	E. W. Mentzer,	Cambria,	E. W. Mentzer,	Hollidaysburg, Blair county.
Black Diamond,	John Miller,		J. Miller,	Mineral Point, Cambria county.
Columbia No. 3,	Mitchel & Layar,	Clearfield,	J. L. Mitchel,	Tyrone, Blair county.
Cushou,	Cambria Iron Company,	Cambria,	Thomas Fulton,	Johnstown, Cambria county.
Conemaugh, Cambria,	Clearfield Consolidated Coal Co.,	Bedford,	John Langdon,	Huntingdon, Huntingdon county.
Chevington, Duval,	E. P. Jenkins,	Bedford,	E. P. Jenkins,	Six Mile Run, Bedford county.
Dysert No. 1,	Canon Lealy,	Cambria,	Canon Lealy,	Hemlock P. O., Cambria county.
Dysert No. 2,	D. Laughman,		D. Laughman,	Altoona, Blair county.
Delany,	Allegheny Coal Coke Company,	Blair,	Hugh McGinn,	P. O. 479, Altoona, Blair county.
Diamond,	G. H. Haywood & Company,	Cambria,	J. H. Haywood,	South Fork, Cambria county.
Deny Shaft,	Deny Coal & Coke Company,	Westmoreland,	Ed. Saxman,	Latrobe, Westmorelaud county.
Euclid,	Euclid Coal Company,		Dr. Luk.	
Eldorado,	Wray & Company,	Cambria,	J. McCartney,	Mountaindale, Cambria county.
Eagle,	Gwiu & Son,		Luther Green,	do. do. do.
Foster,	Saltsburg Coal Company,	Indiana,	D. S. Robinson,	Saltsburg, Indiana county.
Fenu,	John Griffiths,	Cambria,	John F. Griffiths,	Johnstown. Cambria county.
Gallitzen Shaft,	Taylor & McCoy,		David McCoy,	Gallitzen, Cambria county.
Gallitzen Slope,	Mitchel & Layar,		J. L. Mitchel,	Tyrone, Blair county.
Glen White,	Taylor & McCoy,	Blair,	David McCoy,	Glen White, Blair county.
Great Bend,	Great Bend Coal Company,	Cambria,	John E. Bell,	Bellwood, Blair county.
Huntingdon,	Ed. Gould,	Huntingdon,	Ed. Gould,	Dudley, Huntingdon county.
Horse Shoe,	Allegheny Coal and Coke Company,		Hugh McGinn,	P. O. 479, Altoona, Blair county.
Isabella,	Isabella Furnace Company,	Westmoreland,	William Crist,	Coketon, Westmoreland county.
Irvona,	Irvona Coal and Coke Company,	Clearfield,	John MacNulty,	Coalport, Clearfield county.
J. C. Stineman,	J. C. Stiueman,	Cambria,	J. C. Stineman,	South Fork, Cambria county.
Loyalhanna Shaft,	Loyalhanna Coal and Coke Co.,	Westmoreland,	C. H. Carrol,	Latrobe, Westmoreland county.
Latrobe Coal Works,	Latrobe Coal and Coke Company,		D. W. Jones.	
Lockport,	Lockport Coal and Coke Company,		Alexander Cameron,	Lockport, Westmoreland county.
Lemou,	Blair Coal and Iron Company,	Blair,	Martin Meagher,	Gallitzen, Cambria county.
Mount Vernon No. 3,	C. C. Coal Company,	Cambria,	John Langdon,	Huntingdon, Huntingdon county.
Moshauan,	Felix Tool & Company,	do.	Felix Fool,	Portage, Cambria county.
Martindale,	J. C. Martin & Company,		J. C. Martin.	
Millwood Shaft,	Millwood Coal Company,	Westmoreland,	E. Kimmel,	Millwood, Westmoreland county.
Monastery Slope,	Frick Coke Company,		R. W. Slater,	Latrobe, Westmoreland county.
M. Saxman,	M. Saxman & Company,		Frank Ruman.	
Maher,	Roda Maher & Company,	Bedford,	Roda Maher,	Six Mile Run, Bedford county.

Mount Equity,	Kemble Iron Company,		William Kelly,	Riddlesburg, Bedford county.
Moredale,	E. P. Jenkins,	Huntingdon,	Thomas A. Jones,	Broad Top City, Huntingdon county.
Miller Coal Company,	Miller & Company.	Cambria,	M. Miller,	Portage, Cambria county.
National,	Whitner Coal and Coke Company,	Clearfield,	George Ramsey,	Irvona, Clearfield county.
Oakland,	Samuel Haggerty,	do.	William Wright,	Coalport. Clearfield county.
Ocean,	William Sweet,	Huntingdon,	Wm. Sweet,	Saxton, Bedford county.
Porter,	Porter & Dennison,	Blair,	C. H. Porter,	Hollidaysburg, Blair county.
Prospect,	Reed Brothers,	Huntingdon,	William Reed,	Dudley, Huntingdon county.
Rubus,	Cresson & Clearfield Coal & Coke Co.,	Cambria.	Richard Bowan,	Frugality, Cambria county.
Robertsdale,	Rockhill Coal and Iron Company,	Huntingdon,	Charles Conners,	Robertsdale, Huntingdon county.
Ridgeview,	D. C. George & Company,	Westmoreland,	D. C. George,	Latrobe, Westmoreland county.
St. Clair,	St. Clair Coke Company,		M. A. Preston.	
Smittle,	Joseph Smittle,	Cambria,	Joseph Smittle,	Mountaindale. Cambria county.
South Fork,	George B. Stineman,		G. B. Stineman,	South Fork, Cambria county.
Sonman No. 1,	W. H. Piper & Company.			
Sonman No. 2,				
Standard,	R. Hughs & Company,		Richard Hughs,	Altoona, Blair county.
Sonman Shaft,	Sonman Coal Company,		Charles Hughs,	
Smith,	Smith & Company,	Indiana,	W. Smith,	Blairsville, Indiana county.
Turner,	Turner & Company,		W. L. Turner.	
Tipton,	Tipton Coal Company,	Blair,	C. B. Finley,	Phillipsburg, Centre county.
Webster No. 3,	John Scott & Son,	Cambria,	Philip Hartman,	Summerhill, Cambria county.

TABLE No. 2.—Gives the total number of tons of coal mined and tons of coke produced in each colliery, number of days worked, number of employés, number of persons killed and injured, number of kegs of powder used, etc., in the Sixth Bituminous Mining District, for the year ending December 31, 1887.

NAMES OF COLLERIES.	Location.	Total production in tons of coal.	Total production in tons of coke.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs of powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Number coke ovens
Argyle,	Cambria county,	115,337	....	115,337	314	133	...	...	1,080	...	16	...	...
Aurora,		21,861	....	21,861	265	35	..	...	150	...	2	...	...
Blairsville,	Indiana county,	18,000	12,600	.....	300	17	...	...	....	...	1	...	24
Bennington Slope,	Blair county,	57,896	24,263	27,732	287	130	...	...	50	5	3	...	...
Beach Grove,		17,100	3,500	12,500	200	33	...	...	100	...	3	...	30
Blain Run,	Clearfield county,	33,312	....	33,312	191	42	...	...	30	...	5	...	...
Benedict,	Huntingdon county,	15,000	....	15,000	90	84	...	...	33	...	14	...	...
Brown,	Bedford county,	95,000	....	95,000	225	126	2	...	150	...	15	...	...
Ben's Creek Plane,	Cambria county,	30,703	....	30,703	220	67	...	2	120	...	8	...	...
Black Diamond,		36,000	....	36,000	264	39	...	...	180	...	2	...	...
Columbia No. 3,	Clearfield county,	31,980	....	31,900	198	48	...	...	30	...	4	...	...
Cushon,	Cambria county,	24,937	....	.....	250	45	...	...	150	...	6	...	...
Conemaugh,		14,878	8,340	.....	253	38	...	...	70	...	3	...	35
Cambria,	Bedford county,	33,415	....	33,415	222	70	...	...	50	...	7	...	...
Chevington,		22,281	....	22,281	139	77	...	...	50	...	5	...	...
Duval,		8,831	....	8,772	174	21	...	...	10	...	3	...	...
Dysert No. 1,	Cambria county,	14,506	4,800	9,560	260	25	...	...	50	...	4	...	17
Dysert No. 2,		45,678	....	45,378	208	98	...	...	100	...	13	...	...
Deny Shaft,	Westmoreland county,	2,000	775	.....	75	38	...	...	....	2	4	...	50
Delany,	Blair county,	55,439	11,440	34,656	261	86	1	1	75	2	6	...	25
Diamond,	Cambria county,	9,000	....	9,000	117	39	...	...	100	...	6	...	...
Eldo ado,		10,000	....	10,000	120	25	...	...	175	...	4	...	...
Euclid,		21,298	....	21,298	285	49	...	...	85	...	4	...	...
Eagle,		7,294	....	7,294	250	11	...	...	80	...	1	...	...
Fenn,		8,000	....	8,000	300	13	...	...	30	...	2	...	...
Foster,	Indiana county,	160,000	....	160,800	294	152	...	...	50	1	8	1	...
Gallitzen Shaft,	Cambria county,	165,211	61,425	61,495	260	279	1	...	250	3	20	...	120
Gallitzen Slope,		171,525	66,262	62,171	260	337	2	...	653	5	14	...	174
Great Bend,		76,883	....	76,883	240	90	...	...	420	...	...	...	...
Glen White,	Blair county,	52,666	34,709	.....	309	122	...	...	150	2	14	...	80
Horse Shoe,	Cambria county,	21,232	15,222	2,537	271	49	...	...	60	...	7	...	35
Huntingdon,	Huntingdon county,	2,000	....	2,000	70	24	...	...	20	...	2	...	...

Isabella,	Westmoreland county,	160,000	94,500	. . . . .	300	200	. . .	. . .	. . . .	7	20	. . .	251
Irvona,	Clearfield county,	79,000	33,333	29,311	306	107	. . .	. . .	250	1	17	. . .	80
J. C. Stineman,	Cambria county,	76,360	. .	76,360	301	111	. . .	. . .	500	. . .	12	. . .	. . .
Loyalhana Shaft,	Westmoreland county,	82,316	38,412	17,680	215	200	. . .	. . .	. . . .	8	20	. . .	244
Latrobe Coal Works,	. . . . .	78,908	25,000	10,413	246	140	. . .	. . .	270	. .	11	. . .	140
Lemon,	Blair county,	135,165	49,193	58,973	308	151	. . .	. . .	. . . .	4	13	. . .	100
Lockport,	Westmoreland county,	1,000	. . . .	1,000	20	14	. . .	. . .	10	. . .	1	. . .	25
Mount Vernon No. 3,	Cambria county,	20,196	. . . .	20,196	140	48	. . .	. . .	20	. . .	4	. . .	. . .
Moshannon,	. . . . .	10,167	. . . .	10,167	230	19	. . .	. . .	44	. . .	2	. . .	. . .
Miller,	. . . . .	4,820	. .	4,820	121	12	. . .	. . .	45	. . .	1	. . .	. . .
Martindale Slope,	. . . . .	60,000	2,000	55,000	230	101	. . .	. . .	100	1	8	. . .	25
Moredale,	Huntingdon county,	11,015	. . . .	11,015	150	36	. . .	. . .	100	. . .	4	. . .	. .
Millwood Shaft,	Westmoreland county,	59,614	. .	53,000	264	94	. . .	. . .	150	6	6	. . .	. . .
Monastry Slope,	. . . . .	135,000	80,000	. . .	241	211	. . .	. . .	. . . .	7	20	. . .	208
M. Sayman,	. . . . .	58,500	20,250	31,500	222	90	. . .	. . .	. . .	3	9	. .	60
Maher,	Bedford county,	22,000	. .	22,000	240	45	. . .	. . .	100	. . .	5	. . .	. . .
Mount Equity,	. . . . .	66,433	35,895	4,000	304	104	. . .	. . .	16	. . .	17	. . .	88
National,	Clearfield county,	38,296	10,317	25,000	170	165	. . .	. . .	70	2	6	. . .	100
Oakland,	. . . . .	35,000	. . . .	35,000	250	61	. . .	. . .	500	. . .	6	. . .	. . .
Ocean,	Huntingdon county,	30,000	. . . .	30,000	280	56	. . .	. . .	150	. . .	5	. . .	. . .
Prospect,	. . . . .	45,000	18,000	20,000	240	60	1	. . .	125	. . .	11	. . .	109
Porter Shaft,	Blair county,	40,435	3,543	33,883	195	132	. . .	. . .	10	2	24	. . .	. . .
Rubus,	Cambria county,	7,510	4,110	1,345	125	153	. . .	. . .	210	. . .	7	. . .	88
Rolling Mill,	. . . . .	5,911	. . . .	. . . . .	. . . . .	. . . . .	. . .	. . .	. . . . .	. . .	. . .	. . .	. . .
Robertsdale,	Huntingdon county,	153,289	46,547	144,988	264	278	. . .	2	1,500	7	39	. . .	134
Ridge View,	Westmoreland county,	40,000	18,000	10,000	200	93	. . .	. . .	. . .	1	7	. . .	50
St. Clair,	do. do.	62,109	33,707	13,476	200	139	. . .	. . .	15	3	15	. . .	123
Smittle,	Cambria county,	18,086	. . . .	18,986	249	58	. . .	. . .	102	. . .	3	. . .	25
South Fork,	. . . . .	16,649	. . . .	1,664	125	29	. . .	. . .	25	1	3	. . .	. . .
Sonman No. 1,	. . . . .	38,617	. . .	38,617	250	98	1	1	95	1	13	. . .	. . .
Sonman No. 2,	. . . . .	59,250	7,386	47,711	250	112	. . .	. . .	250	. . .	15	. . .	20
Sonman Shaft,	. . . . .	46,378	. . . .	45,778	240	99	. .	1	75	2	7	. . .	. . .
Standard,	. . . . .	35,147	. . . .	35,147	240	52	. . .	. . .	40	. . .	5	. . .	. . .
Smith,	Indiana county,	20,800	. . . .	20,800	300	11	. . .	. . .	. . . .	. . .	2	. . .	. . .
Turner,	. . . . .	14,729	. . . .	14,729	310	10	. . .	. . .	. . . .	. . .	1	. . .	. . .
Tipton,	Blair county,	21,750	. . . .	21,490	115	99	. . .	. . .	150	2	6	. . .	. . .
Webster No. 3,	Cambria county,	145,824	. . . .	145,824	259	207	. . .	5	762	2	28	. .	
Total,	. . . . .	3,341,331	774,529	2,114,843	15,272	6,078	7	12	10,254	80	611	1	2,515

TABLE No. 3.—Showing the number of each class of employés at each colliery in the Sixth Bituminous Mine District during the year 1887.

NAMES OF COLLIERIES.	LOCATION—COUNTY.	NUMBER OF PERSONS EMPLOYED INSIDE.							NUMBER OF PERSONS EMPLOYED OUTSIDE.							Grand totals—inside and outside.
		Inside foreman or mine boss.	Miners.	Miners' boys.	All company men.	Drivers and runners.	Doorboys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Cokers and yardmen.	All company men.	Superintendent, bookkeepers and clerks.	Total outside.	
Argyle,	Cambria,	1	93	14	4	9	. . .	123	1	2	. . .	. . . .	6	2	11	134
Aurora,	. . . . .	1	25	3	3	2	. . .	34	. . .	. . . .	. . .	. . . .	2	1	3	37
Blairsville,	Indiana,	1	7	1	. . .	1	. . .	10	. . .	. . . .	. . .	6	. . .	1	7	17
Bennington,	Blair,	1	84	7	2	23	4	121	1	3	2	. . . .	2	1	9	130
Beach Grove,	. . . . .	. . .	. . . .	. . .	. . .	. . .	. . .	. . . .	. . .	. . . .	. . .	. . . .	. . .	. . . .	. . . .	. . .
Blain Run,	Clearfield,	1	37	. . .	2	3	2	45	. . .	. . . .	. . .	. . . .	. . .	. . . .	. . . .	45
Benedict,	Huntingdon,	1	60	5	1	8	3	77	. . .	1	. . .	. . . .	3	3	7	84
Brown,	Bedford,	1	90	15	1	9	3	119	. . .	2	. . .	. . . .	3	3	8	127
Ben's Creek,	Cambria,	1	48	5	1	7	2	64	. . .	1	. . .	. . . .	2	1	4	68
Black Diamond,	. . . . .	1	25	3	1	5	1	35	. . .	2	. . .	. . . .	1	1	4	39
Cushon,	. . . . .	1	30	. . .	3	6	. . .	40	. . .	1	. . .	. . . .	3	1	5	45
Conemaugh,	. . . . .	1	20	2	1	2	. . .	26	. . .	. . . .	. . .	10	2	. . . .	12	38
Cambria,	Bedford,	1	50	5	1	6	2	65	. . .	1	. . .	. . . .	3	1	5	70
Chevington,	. . . . .	1	66	2	1	4	2	70	. . .	1	. . .	. . . .	2	1	4	74
Columbia,	Clearfield,	1	37	2	2	3	1	46	. . .	. . . .	. . .	. . . .	1	1	2	48
Duval,	Bedford,	1	16	. . .	. . .	2	. . .	19	. . .	. . . .	. . .	. . . .	1	1	2	21
Dysert No. 1,	Cambria,	1	10	1	2	3	. . .	17	. . .	1	. . .	4	2	1	8	25
Dysert No. 2,	. . . . .	1	65	4	4	13	3	90	. . .	1	. . .	. . . .	6	1	8	98
Delany,	. . . . .	1	51	4	3	7	2	63	. . .	2	1	8	5	2	18	86
Deny Shaft,	Westmoreland,	1	20	. . .	1	2	. . .	24	. . .	1	1	6	5	2	15	39
Diamond,	Cambria,	1	25	5	. . .	3	. . .	34	. . .	1	. . .	. . . .	2	2	5	39
Euclid,	. . . . .	1	30	5	8	4	. . .	48	. . .	1	. . .	. . . .	2	1	4	52
Eagle,	. . . . .	1	8	. . .	. . .	1	. . .	10	. . .	. . . .	. . .	. . . .	. . .	1	1	11
Eldorado,	. . . . .	1	20	. . .	1	3	. . .	24	. . .	. . . .	. . .	. . . .	. . .	1	1	25
Foster,	Indiana,	1	100	11	10	7	2	131	1	5	2	. . . .	11	3	22	153
Fenn,	Cambria,	. . .	. . . .	. . .	. . .	. . .	. . .	. . . .	. . .	. . . .	. . .	. . . .	. . .	. . . .	. . . .	. . .
Gallitzen Shaft,	. . . . .	1	200	5	5	15	5	231	1	3	2	35	4	2	48	279
Gallitzen Slope,	. . . . .	1	202	24	8	12	6	253	1	3	3	62	15	2	84	337
Great Bend,	. . . . .	1	66	9	5	5	2	88	. . .	1	. . .	. . . .	4	2	7	95

Glen White,	Blair,	1	62	. . .	8	10	2	83	1	2	2	25	8	3	41	124
Horse Shoe,	. . . . .	1	24	3	2	7	1	38	1	1	. . .	8	2	1	13	51
Huntingdon,	Huntingdon,	1	16	2	2	1	. . .	22	. . .	1	. . .	. . . .	1	1	3	25
Isabella,	Westmoreland,	1	90	3	14	16	1	125	1	6	6	38	23	2	76	201
Irvona,	Clearfield,	1	55	10	3	8	2	79	1	1	. . .	22	2	2	28	107
J. C. Stineman,	Cambria,	1	82	6	3	12	1	105	. . .	1	. . .	. . . .	4	1	6	111
Loyalhanna Shaft,	Westmoreland,	1	84	10	11	6	4	116	1	4	2	58	17	2	84	200
Latrobe Coke Works,	. . . . .	1	86	3	3	9	. . .	102	1	6	2	23	15	2	49	151
Lockport,	. . . . .	1	10	2	3	1	. . .	17	. . .	1	. . .	6	2	1	10	27
Lemon,	Blair,	1	80	. . .	1	5	. . .	87	1	2	. . .	45	4	1	53	140
Mount Vernon No. 3,	Cambria,	1	35	4	. . .	3	2	45	. . .	1	. . .	. . . .	1	1	3	48
Moredale,	Huntingdon,	1	27	. . .	1	3	1	33	. . .	1	. . .	. . . .	. . .	1	2	35
Moshannon,	Cambria,	1	15	. . .	. . .	2	. . .	18	. . .	. . .	. . .	. . . .	. . .	1	1	19
Martindale Slope,	. . . . .	1	75	. . .	3	8	4	91	1	2	1	6	2	1	13	104
Miller Coal Company,	. . . . .	1	9	. . .	. . .	1	. . .	11	. . .	1	. . .	. . . .	. . .	1	2	13
Millwood Shaft,	Westmoreland,	1	63	5	3	6	3	81	1	1	4	. . . .	7	1	14	95
Monastry Slope,	. . . . .	1	103	7	7	13	2	138	1	6	2	52	10	2	73	201
M. Saxman,	. . . . .	1	50	4	2	7	2	66	1	2	2	13	6	1	25	91
Mt. Equity,	Bedford,	1	43	7	1	9	3	64	1	6	. . .	29	2	2	40	101
Maher,	. . . . .	1	35	. . .	2	4	. . .	42	. . .	1	. . .	. . . .	1	1	3	45
National,	Clearfield,	1	100	3	3	7	3	122	1	2	1	30	2	3	39	161
Oakland,	. . . . .	1	40	7	2	5	2	57	. . .	1	. . .	. . . .	2	1	4	61
Ocean,	Bedford,	1	35	5	. . .	4	2	47	. . .	1	. . .	. . .	2	2	5	52
Porter Shaft,	Blair,	1	67	15	3	17	3	106	1	2	2	16	4	1	26	132
Prospect,	Huntingdon,	1	60	9	2	10	5	87	1	2	. . .	22	3	2	30	117
Robertsdale,	. . . . .	1	150	20	22	26	10	229	1	4	4	33	6	3	51	280
Rubus,	Cambria,	1	80	2	6	6	2	97	1	3	. . .	46	4	4	58	155
Ridge View,	Westmoreland,	1	55	2	3	7	2	70	1	2	1	13	4	2	23	93
St. Clair,	. . . . .	1	70	3	2	10	3	89	1	2	2	35	7	3	50	139
Smittle,	Cambria,	1	47	2	. . .	4	1	55	. . .	1	. . .	. . . .	. . .	2	3	58
South Fork,	. . . . .	1	18	6	. . .	3	. . .	28	. . .	. . .	1	. . . .	1	1	3	31
Sonman No. 1,	. . . . .	1	50	9	2	17	3	82	. . .	1	. . .	. . . .	5	2	. . .	90
Sonman No. 2,	. . . . .	1	65	10	2	17	3	98	. . .	1	. . .	7	4	2	14	112
Sonman Shaft,	Cambria,	1	75	5	3	6	2	92	1	1	1	. . . .	3	1	7	99
Standard,	. . . . .	1	42	. . .	2	4	1	50	. . .	. . .	. . .	. . . .	2	1	3	53
Smith,	Indiana,	1	9	. . .	1	2	. . .	13	. . .	. . .	. . .	. . . .	. . .	1	1	14
Turner,	. . . . .	1	9	. . .	. . .	1	. . .	11	. . .	. . .	. . .	. . . .	. . .	1	1	12
Tipton,	Blair,	1	80	2	2	4	3	92	. . .	2	1	. . . .	3	2	8	100
Webster No. 3,	Cambria,	1	144	20	2	18	11	196	1	1	2	. . . .	5	2	11	207
Total,	. . . . .	66	3,726	323	196	461	124	4,887	26	104	47	658	250	103	1,191	6,078

TABLE No. 4.—List of fatal accidents occurring in and about the mines of the Sixth Bituminous Mine District for the year ended December 31, 1887.

Date of accident.	NAMES OF PERSONS.	Occupation.	Age.	Widow.	Number of Orphans.	Name of Colliery. Location—County.	Nature and Cause of Accident.
March 22,	William Donaldson,	Miner,	37	Yes,	1	Prospect, Huntingdon,	Killed by a fall of coal.
30,	Gilbert Rutledge,	Driver,	18	No,	...	Gallitzen Slope, Cambria,	Killed by a mine wagon.
April 23,	Calvin Hancuff,	Miner,	17	No,	...	do.	Killed by a fall of coal.
June 16,	Charles Laitz,	do.	16	No,	...	Brown, Bedford,	Killed by a fall of coal.
21,	C. B. Stemmler,	do.	39	Yes,	2	Delany, Blair,	Killed by a fall of coal.
Oct. 31,	George Killinger,	do.	21	No,	...	Somman No. 1, Cambria,	Killed by a mine car.
Nov. 22,	Elmer Weimer,	do.	26	Yes,	2	Brown, Bedford,	Killed while blasting.

TABLE No. 5—List of non-fatal accidents occuring in and about the mines of the Sixth Bituminous Mine District, for the year ended December 31, 1887.

Date of accident.	Name of Person.	Occupation.	Age.	Widow.	Number of orphans.	Name of Colliery. Location—County.	Nature and cause of accident.
Jan. 4,	Elias Meyers,	Miner,	55	Yes,	...	Webster No. 3, Cambria,	Collar-bone broken by a fall of coal.
Feb. 8,	Andrew Smith,	do.	50	Yes,	...	Sonman No. 1, Cambria,	Shoulder dislocated by a fall of coal.
March 2,	William Jonson,	Doorkeeper,	16	No,	...	Webster No. 3, Cambria,	Leg broken by a car.
April 5,	Peter Hamilton,	Miner,	21	No,	...	Ben's Creek Plane, Cambria,	Crushed by a mine car.
May 4,	Charles Wilson,	do.	45	Yes,	...	do. do.	Leg broken by fall of slate.
21,	Joseph Eckenlaub,	Rodsman,	35	Yes,	...	Delaney. Blair,	Hurt by mine car.
July 1,	Nicholas Cline,	Driver,	20	No,	...	Brown, Bedford,	Injured by a car.
Aug. 24,	George Meyers,	do.	30	Yes,	...	Webster No. 3, Cambria,	Leg broken by mining car.
Sept. —,	D. Armstrong,	Miner,	37	Yes,	...	do. do.	Collar-bone broken by a fall of coal.
—,	H Penrod,	do.	40	Yes,	...	do. do.	Collar-bone broken by a fall of coal.
30,	Aimie Charlier,	do.	40	No,	...	Robertsdale, Huntingdon,	Collar-bone broken by a fall of coal.
Nov. 11,	Louis Devoy,	do.	45	Yes,	...	do. do.	Collar-bone broken by a fall of coal.

SEVENTH BITUMINOUS DISTRICT.

Hon. THOMAS J. STEWART,

Secretary of Internal Affairs:

SIR:—I have the honor to submit to you my third annual report of the Seventh bituminous district for the year ending December 31, 1887. The total production for the year is considerably less than last year, caused principally by the low stage of water in the Ohio river during the summer and autumn months, which caused a suspension of operations at most of the river mines for a period of six months. Operations at several of the railroad mines have also been somewhat curtailed during the summer season for lack of transportation. The whole of the production, excepting two small mines, is obtained from the celebrated Pittsburgh coal bed, and the large number of mines in operation, together with the amount of coal taken out annually, which is on the increase, it may safely be said that in several localities the hills of Allegheny county are being fast denuded of this excellent seam of coal. It is unfortunately too true that the extensive territory worked out and abandoned still contains a vast amount of coal which has, through the careless haphazard methods of mining in vogue formerly, been wasted and destroyed beyond all possible recovery, and I am sorry to say that this destructive policy is far from being abandoned even at the present time; but there is not any good reason advanced to justify the unnecessary waste of so valuable a commodity, as by the application of the present known scientific methods of mining the amount of mineral left in the ground would be very insignificant. We are sometimes met by the argument that our coal supply is abundant; a fact we are willing to concede, nevertheless we are disposed to maintain that every ton of this useful mineral wasted is so much deducted from the wealth of our nation. The sanitary condition of a great number of the mines is good, but there are quite a number where it could be improved with advantage to all parties concerned. It is satisfactory to note that most of the operators and officials now recognize this fact and endeavor to act upon the principle that the best results are obtained by operating their mines on systematic plans, and by applying every known safeguard for the safety

of their employés and the security of their property, while others, either through ignorance of the necessary requirements or for other reasons, seem to give little attention to anything beyond taking out the coal (or a part of it) in the old slovenly way, and they will make no improvements for the health and safety of their employés only as the inspector demands it, and unfortunately it is necessary in some instances to present those demands in unmistakable terms before any effect is produced. Good ventilation and an abundant supply of suitable timbers are two of the main provisions of the laws to be considered and enforced with a view to securing the health and safety of the miners. It should always be a rule, strictly enforced, that the propping of the slate or roof be at all times attended to as soon as the coal is excavated. Whether this is done or not, depends largely upon the men themselves, but the fact that it is not done, is oftentimes impressed upon my mind very forcibly and the amount of carelessness and want of forethought displayed by a very large number of our underground workers is something sad to contemplate, and many of them pay the penalty by loss of life or limb as the result of their own carelessness. In order to obtain a pure, healthful atmosphere in our mines it is necessary, first, to procure apparatus of sufficient power to do the work required of it, with a good margin in reserve in case of an emergency; second, to adopt a judicious system of distribution of the air-current through the mine, so that each working place may have a steady sweeping current passing through sufficient for all purposes. The fact of a large volume of air passing through the ventilating apparatus is no guarantee that the mine is well ventilated unless it is known that its distribution to the working places is systematically arranged. The amount of ventilation necessary can, of course, only be determined by a knowledge of the surrounding circumstances. It has long been the prevailing idea that the mines generating fire-damp require a larger air-current than those wherein it is not generated, and to a certain extent it may be correct; but that view will by no means hold good in all cases, for in mines where explosive gases are absent, *other* gases of a non-explosive nature are generally found in very large quantities, which are generally more difficult to expel from the workings and more deadly in their effect upon the health of the workmen than fire-damp, the only difference being that the one, when ignited, will scatter death and destruction on every hand, while the other, unless the atmosphere is heavily charged with it, may take a few years to accomplish its deadly work; but it will slowly and surely bring its victims to the grave; and if the extent of mortality caused by its insidious effects in years gone by were known, I venture to assert that the number lost by explosions would be insignificant in comparison, but because its poisonous operations are bringing down its victims by degrees, very few people are aware of its inroads upon human life, consequently very little public commisseration is excited in

regard to it. The furnace is the means mostly employed to produce ventilation in this district, and we have a goodly number that were erected with a view to efficiency, and are giving excellent results, but a still larger number where cost appears to have been the guiding factor. It is well understood by all parties who have devoted any study to the subject, that the power of the furnace largely depends upon the location and depth of the upcast shaft and not alone upon its size or mode of construction. Possibly a want of knowledge on this point by our mine managers is one reason why we find so many of our furnaces built on the crop line, and in deep ravines where there is only a few feet of cover above the coal. There are also a number of fans in use, but they are, with very few exceptions, entirely too small—and like the furnaces last described, inadequate to perform the work required of them. In this connection it may be truthfully asserted that the subject of ventilation and mining matters in general are receiving more care and attention from our mining communities now, than ever before. This stimulus to thought has, without doubt, been engendered by that clause in the mining law requiring the mine-bosses and fire-bosses to hold certificates of capability, and under its operations the best men are steadily coming to the front to take charge of the mines; but according to the natural order of social arrangements, the pit-boss is very properly subordinate to and subject to the orders of the superintendent or general manager, many of whom have very little knowledge of the many requirements pertaining to the interior of the mines, and assisting the pit-boss in carrying out the provisions of the law. They are sometimes a positive hindrance. In fact, in nearly every case where I have had cause to complain about the unsatisfactory condition of the mines, the fault has laid with the superintendent and not the mine-boss, and I am fully convinced that it would be conducive to the better health and safety of the miners and the security of the mines if that official was required to hold a certificate of compentency of a higher grade than the mine-boss, so that he would be qualified to share the responsibility of management with his subordinates. A provision of this kind would also be an advantage to the operators, as their property would then be more skilfully and economically managed; and I am at a loss to see how harmony and good management can prevail without such a provision. The act of June 30, 1885, could, I think, be amended with advantage in several other respects; for instance, if the inspectors were supplied with a copy of the map of each mine in their respective districts to be kept in their offices, it would be a great help to them in the proper discharge of their duties, especially in the matter of ventilation, as they could then acquaint themselves with the various systems adopted, and any defects contained therein could be more easily located and pointed out to the mine officials.

An amendment of the fifth section, indicating a maximum distance

that entries, air-ways and other narrow work may be driven in advance of the air-current when opening up new workings, would be conducive to the health and safety of the men employed at this kind of work in some instances where the single-entry system is in operation. I have frequently found men working in atmosphere totally unfit to breathe.

The clause in section ten requiring the inspector to visit each mine in his district once every three months is impracticable and should be stricken out, as there is very little use in inspecting a mine unless the examination is extended sufficiently to enable him to become acquainted with its general condition and any defects that may exist, and this cannot be done if the letter of the law is to be carried out.

The provision in the eleventh section, instructing the inspector to give five days' notice, upon the discovery of any violation of the act, has a detrimental effect, as in certain places it is made use of to evade legal requirements. The inspectors, after passing the high standard of examination demanded of them, should be credited with possessing enough common sense and discretion to enable them to discern whether the law is being violated wilfully or otherwise, and to act accordingly.

In my opinion, it would be conducive to better discipline and more strict attention to duty by all parties engaged in the various branches of labor connected with mining operations, if section twenty-one was so amended as to bring offenders under the jurisdiction of local justices of the peace, with power to inflict a fine of, say five dollars and upwards, according to the nature of the offense. It needs no argument to show that the minimum penalty of two hundred dollars, as now provided for, precludes any probability of a conviction, especially should the defendant happen to be a workingman; and in matters pertaining to their duties, many of the workmen are as indifferent to the provisions of the law as any one else, and I am decidedly of the opinion that to be effectual in putting a stop to criminal carelessness the penalty should be a reasonable one, and justice dispensed immediately after the offence.

A clause should also be inserted regulating the storing of powder and other explosives used for blasting purposes in mines and the manner of its use, etc. The practice of taking powder into the working places in large quantities is attended with considerable danger, and accidents from this cause sometimes occur.

I have to report fifty-four accident, eleven of which proved fatal. Ten persons lost their lives by falls of slate, roof and coal and one by mine cars. Twenty-six of the non-fatal were caused by falls of slate and roof, five by falls of coal, two by explosions of fire-damp, nine by mine cars and one from other causes. Four of the number killed lost their lives by pure accident and four others through want of care and forethought, and three through carelessness on their own parts. There

is a decrease of seven fatal and three non-fatal accidents from last report. Six widows and fourteen orphan children are left as a result of the above fatalities.

Total production of lump and nut coal in tons of 2,000 pounds,	3,331,104
Total production in tons of slack (about),	604,064
Total production run of mine,	3,935,168
Total production in tons of coke,	29,278
Number of mines in district,	87
Number of mines operated during the year,	80
Number of persons employed inside,	8,320
Number of persons employed outside,	838
Total number of persons employed,	9,158
Horses and mules inside and outside,	576
Number of fatal accidents,	11
Number of non-fatal accidents,	43
Total number of accidents,	54
Number of widows caused by fatalities,	6
Number of orphans from same cause,	14
Number of tons produced per each fatal accident,	357,743
Number of tons produced per each non-fatal accident,	91,516
Number of persons employed per each fatal accident,	833
Number of persons employed per each non-fatal accident,	213
Number of coke ovens in operation during the year,	103

It will be observed that 604,064 tons of the total production consists of slack. This is an item that has not been reported previous to this year, with the exception of about three or four mines, and although it is of excellent quality, yet it is disposed of for a mere nominal sum; in some cases it is given away or dumped on the dirt pile. Previous to the era of natural gas there was, I am informed, a good market for slack in this district and at such prices as would leave a fair margin of profit to the producer; but at the present time profits from this source are exceedingly small. Accompany this report will be found the usual tables and a description of the mines and improvements made therein during the year.

All of which is respectfully submitted.

Yours respectfully,

James Blick.

Idlewood, Allegheny county, March, 1888.

Description of Mines and Improvements Made Therein.

Alliquippo No. 1 and 2.—The sanitary condition of these mines has been good during the past year. The average amount of air current in No. 1 is about 30,000, and in No. 2, 13,000 cubic feet per minute, which is passed through the workings in separate divisions, so that

the men in all parts of the mines get pure air. Mr. Burtoft, who has had charge of the inside operations for several years, has recently resigned from the management and took charge of another mine owned partly by the same firm, and the excellent condition in which I have always found the mines speaks well for his ability as a mine manager.

Amity.—This mine is worked on the single-entry system; in one instance I found the entries advanced too far ahead of the airway, which is a common occurrence where this system of working is adopted, which makes it very injurious to the health of men, but with few exceptions the workings receive an abundant supply of pure air. On my last visit I measured upwards of 30,000 cubic feet per minute, well distributed through the working places.

Atlantic.—Was on each visit found in a healthy condition. Amount of air in circulation, 11,400 feet per minute. The Pacific mine, operated by the same company, is also in good order. Average amount of air passing in this mine, 30,000 feet per minute. Produced by furnace power in each case.

Bridgeville and Old Bower Hill.—These mines are both operated by the same firm. On some occasions I have found the ventilation defective. In the winter season the supply of air is abundant, but in warm summer weather the ventilating apparatus employed is not of sufficient power to do the work required of it. The last named mine has recently recommenced operations after a long suspension.

Bower Hill.—Has mined very little coal during the year. Is worked on the double-entry system, and was at the time of my last visit found in good order. A new ventilating shaft has just been completed and a large furnace will be erected when operations are resumed, the mine being idle at the present time.

Beach Mount.—This property has recently changed hands and operations recommenced after a suspension of one year. Is ventilated by furnace power, and was found in reasonable working order. Average amount of air passing, 8,000 feet per minute. A new ventilating furnace will be erected in the near future.

W. H. Brown's Sons No. 1 and 2.—Located at Boston. Considerable improvements have been made at these mines during the past year. In No. 1 there has been a new ventilating furnace erected, its dimensions are as follows: Height from floor to grate bars, 2.5 feet; from bars to center of arch, 5 feet; width of arch, 10 feet; length, 25 feet; inclination from bars to stack, 1 in 6; height of stack, 105 feet, inside area, 6.5x6.5 feet. Amount of air produced, 42,000 feet per minute. Averge amount produced previous to rebuilding the furnace, 28,000 feet per minute. The above is one of the best and most powerful ventilating furnaces in the district. The ambition of the manager has been to bring the ventilation of the mine up to a state of efficiency second to none, and it may be truthfully said that he has succeeded in doing so. In No. 2 they are opening up a new body of coal. A

shaft has been completed upwards of one hundred feet for the purpose of ventilation. A furnace, the same size as that of No. 1, will be erected, and the mine in the near future will become a very extensive one.

Bellwood.—I have on each visit found this mine in very fair order. A very large amount of black damp is generated, but they have a very good ventilating furnace which will produce ample ventilation to keep the workings in a healthy condition.

Beck's Run.—The head and tail rope system of haulage has recently been adopted at this mine, which enables them to dispense with the use of a locomotive and about ten head of mules. The part of the mine formerly in operation has been abandoned for the time being, and the intention is to advance to the boundary line and mine coal backwards, so as to guard against any further crush or creep, which has given a great deal of trouble in the past. The upcast shaft is far too small for the present requirements, and will have to be enlarged and the furnace rebuilt in order to maintain good ventilation. Formerly both furnaces could be used, now only one will be available for a long time to come. I have always found the mine to be well ventilated and the safety of the men properly guarded.

Beadling.—The coal at this point is below water level, and fire-damp is generated copiously. The mine, as yet, is not very extensive. It is ventilated by a furnace which is not of sufficient power to produce the amount of air that will be required. They have promised to build a larger one in a more suitable location or otherwise provide a fan, which I shall insist on being done without unnecessary delay. Amount of air passing at the time of my last visit, 11,000 cubic feet per minute.

Beach Cliff.—This mine was found in reasonable order, with one exception, when the ventilation in one division of the workings, were below the requirements. It would appear that ventilation was not taken much into consideration when the workings were laid out, as the main return airways are very poorly arranged, and the furnace is not of sufficient power to produce the amount of air required during the summer months. The drainage in some parts of the mine is not very good. On my last visit there was 16,000 cubic feet of air per minute passing at the outlet, but only about 10,000 feet passed around the working places, the other escaped to the furnace through the doors and old worked out places. In a mine of this extent, an attendant should be kept at the furnace regularly, which is not the case here, consequently I have reason to believe that it is oftentimes neglected.

Bellevue.—The present workings is nearly exhausted, and they are opening into a new field of coal. All the entries are driven to daylight and are considerably up grade, so that a fair supply of air is now obtained by natural means.

Butler.—Is a new opening operated by O'Neil & Co. Is not advanced far enough for any general description.

Boyd.—This mine has recently changed hands and is now operated by Mr. Edward Fisher, was at the time of last visit in pretty good order.

Camden.—Was when last visited not in very good order. A very large amount of black-damp is generated in this mine. Fire damp is also given off very freely in some of the workings, especially those places advanced into the solid coal. Amount of air at outlet, 22,500 feet per minute. The conditions of the mine require about 35,000 cubic feet per minute to keep it in a healthy condition, and that can only be obtained by providing a new furnace in a more convenient proximity to the present workings. The manager has promised to make this change. After this is done the mine will be well ventilated.

Castle Shannon No. 1 and 2.—I have at all times found these mines in fair condition. Formerly a large amount of coal was mined, but since the advent of natural gas they have not produced more than one-third of their capacity. No artificial motor is employed to produce ventilation, but as most of the entries are driven to the outcrop good natural ventilation is obtained. Average amount of air in circulation, about 14,000 feet per minute.

Camp Hill.—I have had frequently to complain to this company of their neglect in complying with the provisions of the law. They had no map of the workings, and are as often without a mine-boss as with one. The mine is poorly ventilated. They have a furnace in operation, but it is of very little use; in fact, there is very little system or skill adopted in anything pertaining to the mining of coal at this place. On my last visit matters in some respects were a little improved.

Cherry.—I have experienced considerable trouble in trying to prevail upon the operators of this mine to comply with the law, and I may say that they have shown considerable tact in trying to evade its provisions. The ventilation during the summer months has long been in a wretched condition. In the spring of 1886 I requested them to erect a furnace, and as no heed was given to the request, I afterwards gave positive instructions to the same effect. At that time they reduced the number of men to nine, so that I had no further jurisdiction. In the spring of 1887 I again took the matter in hand, and they commenced to erect the furnace which took them about three months, while it could easily have been done in three weeks, as the shafthad been sunk several years previously, but the fact of the matter was that they did not intend to make any improvements if they could possibly evade it, at least that was the conclusion which I arrived at. I afterwards found it necessary to institute legal proceedings against them to compel them to provide timber supplies and printed rules as the law directs. At the present time the mine is in very fair condi-

tion. Amount of air passing at outlet at time of last visit, 15,700 cubic feet per minute.

Dravo.—A small furnace has been erected and the ventilation is now in good condition. Average amount of air in circulation, 15,000 cubic feet per minute.

Enterprise.—This mine is well taken care of, and the health and safety of the employés properly guarded. Average amount of air in circulation, about 45,000 feet per minute. The output is about eight hundred tons per day. This mine has been in operation for a long time past, and a vast amount of coal has been taken out. The coal bed at this point all lies below water level, so that all the water has to be pumped to the surface. Mr. Roger Hartley, who has a thorough knowledge of mining matters, is the general manager.

Essen.—On my first visit I became aware of the fact that the ventilating fan was only kept in operation during the day, and was often stopped before the miners had ceased work and was not started to run in the morning until many of the men had entered the mine and gone to their working places, in fact there were some few men at that time working on the night shift, and during the time when the ventilating current was entirely cut off from all parts of the mine, as from the position of the inlet and outlet which are on the same level, the ventilation would certainly come to a stand in a very few minutes after the fan was stopped, so that for about twelve hours each night noxious gases could accumulate all through the mine undisturbed, which would require a considerable length of time for their removal each morning. I also found that they had discontinued to examine any part of the workings with a safety lamp previous to the men going to their work. The excuse offered was that, because gas had not not been seen for some weeks it was not thought necessary to continue the examinations. Other matters of importance to the health and safety of the men were also being somewhat neglected. The mine at that time was managed in a very careless manner. I at once gave the usual written notice to remedy the above defects, which was immediately done. On my last two visits I found no cause of complaint. Amount of air passing, 26,000 feet per minute.

No. 2 Mine.—Operated by the same company. Is now well ventilated. A large furnace has been erected during the year, which will produce about 35,000 cubic feet of air per minute. It is the largest and best constructed furnace in that vicinity. The drainage of the mine is not very good at present, but that will shortly be remedied, as they are now driving a water way to connect with the lowest level.

Fox.—Is in good condition. Amount of air circulation, 11,100 feet per minute.

Federal Springs.—Is in very fair order. Amount of air passing will average about 12,000 cubic feet per minute.

Fort Pit.—This mine is also in reasonably good working order. A

fire basket has been provided to produce ventilated. Amount of air passing, about 10,000 feet per minute.

Glendale.—Is an old mine nearly exhausted. Only a few men are employed taking out pillars. Was, when last visited, in good condition.

Glasshouse.—Is a small mine employing about ten persons. Was not in very good condition.

Glenshaw.—Was on each visit found in reasonable working order. Amount of air passing, 5,500 feet per minute.

Grant.—The drainage of this mine is somewhat defective. The coal bed lies near the surface, and when the pillars are taken out large volumes of surface water passes into and through the mine. Pretty good ventilation is maintained. Amount of air at outlet, 20,000 feet per minute, but a large portion of it comes through surface breaks in the abandoned parts of the mine, of which there are a large number, and is a great hindrance to the efficient ventilation of the workings. This mine, according to the custom which prevailed some years ago (and which is not extinct yet), was opened and operated without any system or thought for future requirements. The consequence is that no main airways are preserved. Neither is there any convenience for proper drainage without an enormous outlay, which makes it very difficult at the present time, to either ventilate or drain the workings.

H. D. O'Neil.—The ventilation in some parts of the mine was very defective during the summer season. They have however sunk a shaft and are making preparations to erect a new furnace, which, when complete, will produce ample ventilation. Amount of air passing when last measured, 12,000 feet per minute.

Horner & Roberts No. 3 and 4.—No. 3 has not been in operation a great deal throughout the past year. No. 4 has been worked more steadily. Both mines are well drained and ventilated and in good order. Average amount amount of air in No. 3, about 28,000, and in No. 4, about 23,000 cubic feet per minute. These mines are under the daily supervision of Matthew Creevey, who has a thorough knowledge of mining matters.

Hays Street Run No. 1 and 2.—The inside workings are connected with each other. During the summer months the ventilation was below the requirements. A shaft is now sunk for the purpose of ventilation, and a large furnace will be erected, when all cause of complaint will be removed.

Hasting's Slope was found in reasonable order when last visited. Amount of air in circulation, about 12,000 cubic feet per minute.

Jones.—There has been very little work during the past year. The mine was in very fair condition when last visited. Amount of air 20,000 feet per minute.

Jefferson.—Considerable improvements have been made during the year. The main dilley road has been graded for a distance of 2,200

feet into the mine, so that the empty trip is run in to the mine parting by its own gravity, which will considerable lessen the cost of haulage. A new furnace has been built, which will produce about 20,000 feet of air per minute. Mine in good order and well taken care of.

Leesdale.—In the former part of the year the mine was in poor condition. I suggested that the fire basket be changed to another location, which was done, and the ventilation was increased from 7,000 to 12,000 cubic feet per minute as a result. Since that time there has been no cause of complaint.

Lovedale.—This mine still retains its reputation for being well ventilated, and at no period have I found it necessary to complain about any matters connected with its management. Amount of air in circulation at time of last visit, 28,000 cubic feet per minute.

Lower and Upper Walton.—The ventilation of the lower mine is, during warm weather, at times, defective. The worked out or abandoned parts cover a very large area, and throws off a large amount of black damp, which can hardly be prevented from mixing more or less with the air current. All the entries, with one or two exceptions, are driven to the outcrop, with a considerable difference of level of the various openings, which generally causes a fair natural flow of air-current through the workings, especially so in the winter season. The upper mine is at all times well ventilated. They have an excellent furnace in operation which is producing a greater volume of air than any other in the district. Amount passing when last measured, 53,000 cubic feet per minute, which amount is somewhat below the average at the time the measurements were taken. The Walton mine in the first pool is operated by the same company as the above. On my first visit to this mine I found 25,000 cubic feet of air per minute passing at the furnace, but it was not being properly conducted around the working places on account of the doors not being attended to and kept closed. I cautioned the mine-boss to be more strict in regard to the matter in the future. They are opening into a new field of coal on the main tunnel, which will be a separate division from the present workings, and will require an additional furnace for its efficient ventilation.

Laurel Hill—On my first visit I found that they were approaching an old abandoned mine containing a large amount of water. There was no map of the old workings in existence, and as the workings had approached to a point within three hundred feet of the boundry line, it was apparent that great caution was necessary. I therefore suggested to the manager that the workings at that point be discontinued until the water was drained away. I also suggested that he advance with a narrow entry, being careful to protect the workings with bore-holes. My instructions were at once acted upon, and after advancing nearly two hundred feet the bore-holes penetrated into the water, but in the meantime a steam pump had been placed in position at the old pit

mouth, and a considerable quantity of water pumped out. The water was also allowed to drain through the bore-holes in such quantities as the mine pumps could discharge until it was all drained away, but there is yet considerable water standing in the old mine at a lower level than where they have drained it from, which is some hundreds of feet from this point, which will be approached in the same manner as above described. The ventilation of the mine is anything but satisfactory. They have two ventilating fans in operation, but on account of the unfavorable conditions under which they are working, very little effect is produced. About 30,000 cubic feet of air per minute was passing at the outlets when last measured, but only a small portion of it reached the working parts of the mine. The air-ways are very poorly arranged and the permanent stoppings erected for the purpose of conducting the air-current to the face of the workings were in many cases found to be little better than a common field fence. through which most of the air escaped into the return air-ways instead of passing through the working places. Austin King, who is a man of first-class ability as a mine manager, has recently taken charge of of the mine and will without doubt, if permitted, bring its condition to a state of efficiency which will be beneficial alike to the operators and employés.

Montours.—The condition has improved during the year. Still on my last visit I found the ventilation defective in some parts of the workings. This mine, like many others, has been managed in the past without due regard for future requirements, from which cause the present management has many difficulties to contend with, and serious obstacles to overcome in order to ventilate the workings. Amount of air at inlets, about 15,000 cubic feet per minute.

Milesville.—Has not been in operation much since early in the spring. Was when last visited in reasonable order.

Mansfield Nos. 1 and 2.—A new ventilating furnace was erected in No. 1 in the summer. The ventilation has since been good at the head of the workings where coal is being mined, but a large amount of black-damp was for a time encountered on the main tunnel, caused by the action of the furnace upon the numerous surface breaks in the abandoned parts of the mine, the air from which carried the foul gases through the tunnel on its way to the upcast. No. 2 at the present time is in fairly good order. A new stack has been erected on the upcast shaft to the height of forty feet, which added about 5,000 cubic feet per minute to the producing capacity of the furnace. The air-ways have also been improved. All of which tends to the better ventilation of the workings. Amount of air passing in No. 1, 14,400, and in No. 2, 26,000 cubic feet per minute.

McConnell.—I have had considerable trouble at this mine in regard to the ventilation. It is one of those places where they will do as little as possible towards securing the health and safety of the em-

ployés. After serving a legal notice upon them they repaired the furnace and erected a stack on the upcast shaft, but the only remedy is to erect a new furnace in a more suitable location.

National.—On my last visit to this mine the amount of air passing at the outlet was 15,000 feet per minute, but was not very well conducted to the face of the workings.

Natrona.—I have always found this mine ventilated and in all respects in good order.

Nixon.—Is in very fair order. Amount of air passing at outlet, 16,280 feet per minute.

Old Eagle.—Is in good order. Amount of air in circulation when last measured, 19,600 feet per minute.

Ormsby.—On my second visit I found they had discontinued the examination of the workings with a safety lamp, previous to the men going to their working places in the morning. I gave prompt instructions that a fire-boss be again employed, which was immediately done. It is a lamentable fact that such criminal carelessness should exist, as to seek to economize by dispensing with the services of the fire boss in a mine where fire-damp is generated and where loss of life has occurred from that cause. This was, previous to the era of natural gas, a very extensive operation, employing upwards of four hundred men; at present only about seventy are employed. The product being used for domestic purposes in the city of Pittsburgh. The coal has to be hauled a distance of upwards of four miles from the mine to the tipple. Amount of air passing in that division of the mine where operations are in progress averages 12,000 cubic feet per minute.

Ocean Nos. 2, 3, 4, 5 and Southwest.—These mines are operated by the Youghiogheny River Coal Company; are all worked on the double-entry system. No. 2 is a large operation, producing about 1,000 tons per day when running full; is well ventilated and in all respects in good order. Amount of air passing when last measured was 40,710 feet per minute. No. 3 is not in operation. No. 4 and Southwest is ventilated partly by the same furnace, and while there is a fair amount of air produced, being 32,000 feet per minute, yet the the ventilation here is not as good as in No. 2. A small shaft has been sunk and a fire basket or small furnace will be erected to ventilate one division of the Southwest, which will considerably increase the amount of air in the aggregate. No. 5 is a new opening; is not advanced far enough for a general description.

Pine Run Nos. 1 and 2 have only been in operation about two months during the year. Were, when last visited, in reasonably good order.

Powers Nos. 2 and 3.—No. 2, until recently, has been worked very unsteadily for some time past. On March 12 an explosion of gas occurred under the following circumstances: The mine had suspended operations for an indefinite time, and they had allowed the furnace

fire to become extinguished whereby the ventilation was completely cut off. A notice was placed at the pit mouth. After the mine had been idle about two weeks one of the miners carelessly went past the danger signal into the mine to get some tools which was left in his working place, and on his way came in contact with a large body of fire-damp with his naked light. Fortunately, the gas was in a pure state, or nearly so, and only the edge nearest the inlet exploded, so that the man escaped without serious injury. Had there been sufficient oxygen mixed with the gas to have brought it to its highest explosive point, the destruction would have been fearful. It was gross carelessness on the part of the manager to allow the ventilation to be suspended without first placing a permanent fence at the pit mouth. When remonstrated with, they all seemed to treat the matter very lightly. The ventilation has hitherto been below the requirements, but they are at the present time erecting a fan which will remedy this defect. A large amount of explosive gas is generated in some parts of the mine which requires a brisk air-current to keep the workings in a safe condition. No. 3 has again been put in operation after a suspension of nearly two years. Both mines are now operated by the Chartiers Block Coal Company.

Penny was, when last visited, in pretty good order. Amount of air passing, about 10,000 cubic feet per minute.

Robbins.—At the time of my first visit the ventilation was rather defective in some parts of the mine, but it has since been improved, and the mine at the present time is in good order. It is very difficult to obtain good ventilation at all times on account of the unsystematic way in which operations had been previously conducted.

Rock Run.—Is well ventilated and is in good order in other respects. Amount of air in circulation, 14,960 feet per minute.

Streets Run Nos. 1 and 2.—A furnace has been erected in No. 2, so that both divisions are now well ventilated and are in good condition in all other respects.

Stones.—On my last visit I observed that some of the entries were driven into the solid coal about 250 yards in advance of the air-current, and the air therein was charged with black damp to such an extent that it was unfit to work in. I have had frequently to complain about the plan of advancing so far ahead of the pure air while opening up new workings. This occurs only where the single-entry system is used. I have also had to complain several times to the manager of this mine in regard to the timber supplies not being provided in accordance with the requirements of the law. Amount of air passing at the inlets, 18,000 cubic feet per minute.

Star.—I have never found the operator of this mine anxious to comply with the provisions of the law; but I have on some occasions found them exceedingly ready to evade the same as far as possible. Promises are readily made but very seldom fulfilled without consid-

erable urging. The ventilation has been defective, but they are now using the furnace, which formerly ventilated the Willow Grove mine. This will produce an ample amount of air to keep the mine in a healthy condition.

Snowden.—Operations at this mine have been very unsteady for some time past; was not in very good condition. Number of employés, 37.

Summer Hill.—This mine is in fairly good order. It is ventilated by a furnace producing when last measured 21,000 cubic feet per minute. A large amount of air is lost through the old workings, which pass directly to the outlet and cannot be prevented. When the mine was opened they failed to preserve proper return air-ways, hence the impracticability of conducting the whole volume of air to the face of workings. The mine is under good management.

Venture.—They have not made much headway since the disastrous fire, which occurred in the early part of 1886. The mine was, when last visited, in good working order.

West Elizabeth.—This is an old mine nearly worked out. It has only been in operation about four months during the year. Was, when last visited, in pretty good condition.

Willow Grove.—In the summer months the ventilation was in very poor condition. I called the attention of the company to this fact and they expressed a desire to keep their mine in a safe, healthy condition, and at once ordered a new ventilating fan, which is now in operation. The mine is now in good order.

Wenono.—This mine is now exhausted and worked about two months during the year.

The following mines have remained closed throughout the entire year, namely, Pioneer, Keightly, Jones and Laughlin, Ocean No. 3, Rankin and Watson's shaft.

TABLE 1.—Showing location of collieries in the Seventh Bituminous Mine District, 1887.

Name of Colliery.	Name of Operator.	Location—County.	Name of Superintendent.	Postoffice Address.
Allaquippo Nos. 1 and 2,	Bailey, Wilson & Co.,	Allegheny,	James Wilson,	Camden.
Amity,	J. C. Risher & Co.,	do.	B. B. Crumb,	Dravosburg.
Atlantic,	Lake Erie Gas Coal and Coke Company,	do.	John F. Bosack,	Beall Haven, Westmoreland county.
Buena Vista,	Youghiogheny River Coal Company,	do.	do. do.	do. do.
Bower Hill,	Imperial Coal Company,	do.	F. L. Shallenberger,	Imperial, Allegheny county.
Bellwood,	Marshall Brothers,	do.	John Marshall,	Homestead.
Beck's Run,	H. J. Burghman (as trustee),	do.	Peter Troutman,	Redman's Mills.
Bendling,	Bendling Brothers,	do.	William Bendling,	Essen.
Beech Cliff,	Imperial Coal Company,	do.	F. L. Shallenberger,	Imperial.
Bellevue,	Gaffobert & Huey,	do.	William Huey,	Elizabeth.
Bridgeville,	A. J. Shulte,	do.	C. P. Mayer,	Bridgeville.
Boyd,	Edward Fisher,	do.	Edward Fisher,	Postoffice Box 906, Pittsburgh.
Butler,		do.	Thomas Lurtoff,	Elkhorn.
Brown's Sons No. 2,	W. H. Brown's Sons,	do.	Robert Cornell,	Boston.
Beech Mount,	Beech Mount Coal Company,	do.	William Sturgeon,	Beech Mount.
Camden,	G. Lyle & Sons,	do.	Joseph Griffiths,	Camden.
Castle Shannon No. 1 and 2,	Pittsburgh and Castle Shannon Railroad Company,	do.	John Juhn,	Castle Shannon.
Camp Hill,	David Sloen,	do.	David Sloen,	Putnam.
Cherry,	Morris McCue,	do.	Morris McCue,	Third avenue and Try street, Pittsburgh.
Cornell & Worling,	W. H. Brown's Sons,	do.	Robert Cornell,	Boston.
Denvo,	Lake Shore Gas Coal Company,	do.	C. Wisser,	Robbins, Westmoreland county.
Enterprise,	Hartley & Marshall,	do.	Rodger Hartley,	South Side, Pittsburgh.
Essen,	Bunford & Co.,	do.	N. F. Bunford,	Essen.
Fox,	Thomas Fox,	do.	Thomas Fox,	Thirty-sixth ward, Pittsburgh.
Federal Springs,	W. J. Sloen,	do.	W. J. Sloen,	Putnam.
First Pool Monongahela Gas Coal Company No. 1,		do.	Charles Giles,	Hope Church.
Fort Pit,	Fort Pitt Coal Company,	do.	John E. McCrickart,	1019 Penn avenue, Pittsburgh.
Glendale,	J. Z. W. Cook,	do.	J. Z. W. Cook,	Connousburg, Washington county.
Glasshouse,	Bates Coal Company,	do.	W. T. Bates,	Woodville.
Glenshaw,	Glenshaw Coal Company,	do.	R. W. Spencer,	Glenshaw.
Grant,	Grant Coal Company,	do.	George Bosack,	Putnam.
H. D. O'Neil,	H. D. O'Neil,	do.	Harvey O'Neil,	McKeesport.
Horner & Roberts No. 3 and 4,	Horner & Roberts,	do.	George Roberts,	Elizabeth.
Hays Street Run No. 2 and 3,	H. C. Burghman (trustee),	do.	J. Watson,	Hope Church.
Husling's Slope,	Pennsylvania Coal Company, Limited,	do.	John Neish,	Bridgeville.
Idlewood,	Stewart, Lewis & Dickson,	do.	T. D. Stewart,	Crafton.
Jefferson,	Foster, Clark & Wood,	do.	Thomas Foster,	Coal Valley.
Jones,	George Jones & Co.,	do.	T. M. Jones,	West Elizabeth.
Lovedale,	John A. Wood & Co.,	do.	George R. Gray,	Elizabeth.
Leesdale,	Gregg Brothers,	do.	Stephen Gregg,	Woodville.
Lower Walton,	Joseph Walton & Co.,	do.	John Rike,	West Elizabeth.
Laurel Hill,	W. P. Rend & Co.,	do.	John Rend,	McDonald, Washington county.
Montours,	Imperial Coal Company,	do.	F. L. Shallenberger,	Imperial.
Milesville,	Milesville Coal Company,	do.	Robert Jenkins,	Sunny Side.

Mansfield No. 1,	Mansfield Coal and Coke Company,	do.	Daniel Reisinger,	1042 Liberty street, Pittsburgh.
Mansfield No. 2,	do. do.	do.	do. do.	do. do.
McConnell,	Joseph McConnell,	do.	Joseph McConnell,	Walker's Mills.
National,	National Coal Company,	do.	F. R. Pinkerton,	Fourth avenue and Fry st., Pittsburgh.
Natrona,	Pennsylvania Salt Manufacturing Company,	do.	J. R. Hill,	Natrona.
Nixon,	Chartiers Valley Coal Company,	do.	Charles Bristol,	Woodville.
Old Eagle,	W. H. Brown's Sons,	do.	James Loutitt,	Monongahela City, Washington county.
Ormsby,	Birmingham Coal Company, Limited,	do.	Joseph Keeling,	South Side, Pittsburgh.
Oak Ridge,	Oak Ridge Coal Company, Limited,	do.	G. W. Schluederberg,	Postoffice Box.
Ocean No. 2, 3, 4 and 5,	Youghiogheny River Coal Company,	do.	John F. Hoosack,	Scott Haven, Westmoreland county.
Old Bower Hill,	A. J. Shulte,	do.	C. P. Mayer,	Bridgeville.
Pine Run No. 1 and 2,		do.		
Pacific,	Lake Erie Gas Coal Company,	do.	John F. Hoosack,	Scott Haven.
Penny,	Penny Coal Company,	do.	David H. Lynch,	McKeesport.
Powers No. 2 and 3.				
Robbins,	Robbins & Co.,	do.	W. R. Smith,	Postoffice Box 611, McKeesport.
Rock Run,	W. J. Snodgrass & Co.,	do.	J. S. Scott,	Camden.
Street's Run,	I. D. Risher,	do.		Hope Church.
Stones',	William Stone's heirs,	do.	George W. Stone,	McKeesport.
Summer Hill,	Frank Armstrong,	do.	Frank Armstrong,	Woodville.
Star,	Francis Mankedick,	do.	Francis Mankedick,	Sturgeon.
Sanford No. 2,	Sanford & Co.,	do.		Essen.
Snowden,	Pittsburgh and Chicago Gas Coal Company,	do.	D. W. Van Eman,	Gastonville, Washington county.
Upper Walton,	Joseph Walton & Co.,	do.	John Rike,	West Elizabeth.
Venture,	Gray & Bell,	do.	William Bell,	Banksville.
West Elizabeth,	O'Neil & Co.,	do.	C. C. Stepheson,	West Elizabeth.
Walton,	Joseph Walton & Co.,	do.	Morris Capp,	Carrie.
Willow Grove,	Willow Grove Mining Company,	do.	T. B. Robbins,	Midway, Washington county.
Wenona,	Wenona Coal Company,	do.	William Skillen,	Elkhorn.

TABLE No. 2—Gives the total number of tons of coal mined and tons of coke produced in each colliery, number of days worked, number of employés, number of persons killed and injured, number of kegs of powder used, &c., in the Seventh Bituminous Mining District, for the year ending December 31, 1887.

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Total production in tons of coke.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Number coke ovens.
Alliquippa Nos. 1 and 2,	Allegheny,	78,676	. . . . .	78,676	107	197	. . .	3	. . . .	. . .	16	. . .	. . . .
Amity,	do.	83,146	. . . . .	83,146	135	180	. . .	2	6	. . .	20	. . .	. . . .
Atlantic,	do.	26,489	. . . . .	26,489	130	80	. . .	. . .	40	. . .	4	. . .	. . . .
Buena Vista,	do.	33,123	. . . . .	33,123	103	119	. . .	1	50	. . .	5	. . .	. . . .
Bower Hill,	do.	28,570	. . . . .	28,570	100	61	. . .	. . .	. . . .	. . .	3	. . .	. . . .
Bellwood,	do.	48,330	. . . . .	48,330	123	152	. . .	1	. . . .	. . .	8	. . .	. . . .
Beck's Run,	do.	53,000	. . . . .	53,000	71	247	. . .	. . .	. . . .	3	12	. . .	. . . .
Beadling,	do.	29,000	. . . . .	29,000	205	93	. . .	1	. . . .	1	4	. . .	. . . .
Beach Cliff,	do.	52,146	. . . . .	52,146	180	134	1	3	. . . .	3	6	. . .	. . . .
Bridgeville,	do.	52,405	. . . . .	52,405	218	113	. . .	. . .	. . . .	. . .	5	. . .	. . . .
Boyd,	do.	5,707	. . . . .	5,707	60	44	. . .	. . .	. . . .	. . .	3	. . .	. . . .
Bellevue,	do.	52,917	. . . . .	52,917	132	171	. . .	. . .	. . . .	1	13	. . .	. . . .
Butler,	do.	1,000	. . . . .	1,000	40	16	. . .	. . .	. . . .	. . .	1	. . .	. . . .
Brown Sons No. 2,	do.	24,028	. . . . .	24,028	158	72	. . .	. . .	. . . .	1	4	. . .	. . . .
Beachmount,	do.	5,773	. . . . .	5,773	70	48	. . .	. . .	. . . .	1	2	. . .	. . . .
Camden,	do.	48,927	. . . . .	48,927	110	174	1	. . .	. . . .	2	15	. . .	. . . .
Castle Shannon No. 1 and 2,	do.	31,111	. . . . .	31,111	300	74	. . .	1	. . . .	. . .	6	. . .	. . . .
Camp Hill,	do.	74,802	. . . . .	74,600	250	86	. . .	. . .	. . . .	2	3	. . .	. . . .
Cherry,	do.	21,648	. . . . .	20,440	132	48	. . .	. . .	. . . .	. . .	5	. . .	. . . .
Cornell and Werling,	do.	90,723	. . . . .	90,723	157	264	. . .	2	. . . .	5	14	. . .	. . . .
Dravo,	do.	34,086	. . . . .	34,086	171	87	1	1	. . . .	. . .	3	. . .	. . . .
Enterprise,	do.	182,221	. . . . .	182,221	252	290	. . .	2	208	4	9	1	. . . .
Essen,	do.	67,506	. . . . .	55,867	133	151	. . .	1	175	2	3	. . .	. . . .
Fox,	do.	9,209	. . . . .	9,209	300	26	. . .	. . .	. . . .	1	1	. . .	. . . .
Federal Spring,	do.	20,500	. . . . .	20,500	200	58	. . .	1	. . . .	. . .	3	. . .	. . . .
Fort Pitt,	do.	40,660	. . . . .	40,660	215	70	. . .	. . .	. . . .	. . .	8	. . .	. . . .
First Pool Monongahela Gas Coal Company No. 1,	do.	972	. . . . .	972	125	29	. . .	. . .	25	. . .	2	. . .	. . . .
Glendale,	do.	13,281	. . . . .	13,281	200	29	. . .	2	. . . .	. . .	1	. . .	. . . .
Glasshouse,	do.	5,500	. . . . .	5,500	180	11	. . .	. . .	. . . .	1	1	. . .	. . . .
Glenshaw,	do.	17,500	. . . . .	15,000	310	38	. . .	. . .	100	. . .	5	. . .	. . . .
Grant,	do.	82,310	. . . . .	82,310	227	127	1	1	. . . .	. . .	16	. . .	. . . .

H. D. O. Neil,	do.	63,127	. . . . .	63,127	200	116	. . .	. . .	. . . .	1	4	. . .	. . . .
Horner and Roberts Nos. 3 and 4,	do.	40,508	. . . . .	40,508	106	169	. . .	2	90	3	7	. . .	. . . .
Hays Street Run Nos. 2 and 3,	do.	110,000	. . . . .	110,000	118	291	1	. .	. . . .	2	20	. . .	. . . .
Hastings Slope,	do.	44,000	. . . . .	44,000	150	92	. . .	. . .	. . . .	2	6	. . .	. . . .
Idlewood,	do.	2,758	. . . . .	2,617	95	17	. . .	. . .	. . . .	. .	2	. . .	. . . .
Jefferson,	do.	79,966	. . . . .	79,966	132	213	1	. . .	. . . .	2	14	. . .	. . . .
Jones,	do.	14,560	. . . . .	14,560	42	112	. . .	. . .	. . . .	. .	9	. . .	. . . .
Lovedale,	do.	42,501	6,905	42,501	175	118	. . .	. . .	125	2	8	. . .	30
Leesdale,	do.	37,423	. . . . .	37,423	219	85	. . .	. . .	. . . .	. .	3	. . .	. . . .
Lower Walton,	do.	76,743	. . . . .	76,743	117	219	. . .	2	. . . .	2	14	. . .	. . . .
Laurel Hill,	do.	296,000	15,600	256,000	300	394	. . .	3	. . . .	13	29	. . .	41
Montour,	do.	79,532	. . . . .	79,532	225	137	. . .	1	. . . .	2	12	. . .	. . . .
Milesville,	do.	33,999	. . . . .	33,999	91	150	. . .	. . .	10	1	7	. . .	. . . .
Mansfield No. 1,	do.	68,032	4,497	56,920	192	142	. . .	2	. . . .	4	8	. . .	22
Mansfield No. 2,	do.	115,696	. . . . .	115,696	192	238	. . .	1	. . . .	. .	11	. . .	. . . .
McConnell,	do.	16,760	. . . . .	16,760	180	43	. . .	. . .	. . . .	. .	4	. . .	. . . .
National,	do.	37,541	. . . . .	37,541	209	112	. . .	. . .	. . . .	2	6	. . .	. . . .
Natrona,	do.	22,927	2,276	. . . . .	202	21	. . .	. . .	50	1	3	. . .	10
Nixon,	do.	40,109	. . . . .	40,109	200	71	. . .	. . .	. . . .	. .	5	. . .	. . . .
Old Eagle,	do.	72,992	. . . . .	72,992	163	155	. . .	. . .	245	3	9	1	. . . .
Ormsby,	do.	39,500	. . . . .	39,500	250	86	. . .	. . .	. . . .	6	9	1	. . . .
Oak Ridge,	do.	57,687	. . . . .	57,687	250	112	. . .	. . .	. . . .	2	3	. . .	. . . .
Ocean No. 2,	do.	207,802	. . . . .	207,802	248	268	1	1	125	. . .	11	. . .	. . . .
Ocean No. 4,	do.	71,410	. . . . .	71,410	155	194	. . .	. . .	75	.	8	. . .	. . . .
Pine Run Nos. 1 and 2,	do.	19,445	. . . . .	19,445	46	176	. . .	. . .	. . . .	. .	7	. . .	. . . .
Pacific,	do.	94,335	. . . . .	94,335	231	146	2	1	75	. . .	9	. . .	. . . .
Penny,	do.	29,120	. . . . .	29,120	140	61	. . .	. . .	. . . .	. .	6	. . .	. . . .
Powers Nos. 2 and 3,	do.	30,000	. . . . .	30,000	200	89	. . .	. . .	. . . .	2	3	. . .	. . . .
Robbins,	do.	45,589	. . . . .	45,589	146	127	. . .	. . .	. . . .	2	10	. . .	. . . .
Rock Run,	do.	33,380	. . . . .	33,380	130	116	. . .	1	. . . .	. .	8	. . .	. . . .
Streets Run,	do.	55,156	. . . . .	55,156	130	175	. . .	. . .	. . . .	2	6	. . .	. . . .
Stones,	do.	50,624	. . . . .	50,624	170	149	. . .	1	. . . .	. . .	9	. . .	. . . .
Summer Hill,	do.	96,835	. . . . .	96,835	237	158	1	2	24	. . .	7	. . .	. . . .
Star,	do.	43,500	. . . . .	43,500	220	86	. . .	. . .	200	. . .	5	. . .	. . . .
Sanford No. 2,	do.	48,494	. . . . .	48,494	168	94	. . .	2	120	. . .	5	. . .	. . . .
Snowden,	do.	35,422	. . . . .	35,422	160	42	. . .	. . .	. . . .	1	2	. . .	. . . .
Upper Walton,	do.	130,676	. . . . .	130,676	199	240	. . .	. . .	. . . .	1	15	. . .	. . . .
Venture,	do.	31,551	. . . . .	30,295	124	126	. . .	. . .	. . . .	4	9	. . .	. . . .
West Elizabeth,	do.	29,463	. . . . .	29,463	95	124	. . .	. . .	. . . .	. .	27	. . .	. . . .
Walton,	do.	85,439	. . . . .	85,439	116	240	. . .	. . .	. . . .	3	13	. . .	. . . .
Willow Grove,	do.	96,000	. . . . .	93,200	240	143	1	2	75	2	15	. . .	. . . .
Wenona,	do.	3,800	. . . . .	3,800	70	22	. . .	. . .	. . . .	. . .	2	. . .	. . . .
Total,		3,935,168	29,287	3,852,383	12,228	9,158	11	43	1,818	92	576	3	103

TABLE No. 3.—Showing the number of each class of employés at each colliery in the Seventh Bituminous Mine District during the year 1887.

NAMES OF COLLIERIES.	LOCATION.	NUMBER OF PERSONS EMPLOYED INSIDE.							NUMBER OF PERSONS EMPLOYED OUTSIDE.							Grand totals—inside and outside.
		Inside foreman or mine boss.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Doorboys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All company men.	Superintendent, bookkeepers and clerks.	Total outside.	
Alliquippo No. 1 and 2,	Allegheny county,	1	140	15	2	14	6	178	2	1	. .	. . . .	15	1	19	197
Amity,	do.	1	130	15	3	13	. . .	162	2	5	. . .	. . . .	10	1	18	180
Atlantic,	do.	1	65	2	3	4	. . .	75	1	1	. . .	. . . .	3	. . . .	5	80
Buena Vista,	do.	1	98	5	4	4	. . .	112	1	1	. .	. . .	5	. . .	7	119
Bellwood,	do.	1	120	8	2	8	. . .	139	1	1	2	. . . .	8	1	13	152
Bower Hill,	do.	1	50	4	1	2	. . .	58	.	1	. . .	. . . .	2	. . . .	3	61
Beck's Run,	do.	1	. . . .	. . . .	. . . .	. . . .	. . . .	215	. . .			. . . .	. .	. . . .	32	247
Beadling,	do.	1	75	3	. . .	5	2	86	1	1	2	. . . .	2	1	7	93
Beach Cliff,	do.	1	95	12	2	10	2	122	.	2	2	. . . .	7	1	12	134
Bellevue,	do.	1	130	16	1	11	. . .	155	1	2	2	. . . .	9	2	16	171
Bridgeville,	do.	2	93	6	2	4	. . .	107	1	2	. . .	. . . .	2	1	6	113
Boyd,	do.	1	35	2	. . .	2	. . .	40	1	1	. . .	. . . .	1	1	4	44
Butler,	do.	1	. . . .	. . . .	. . . .	. . . .	. . . .	12	. . .	. . .	. . .	. . . .	. .	. . . .	4	16
Brown Sons No. 2,	do.	1	45	6	1	4	1	58	1	2	1	. . . .	9	1	14	72
Beach Meunt,	do.	1	35	4		1	. . .	41	1	1	1	. . . .	3	1	7	48
Camden,	do.	1	130	9	3	11	1	155	1	1	2	. . . .	14	1	19	174
Castle Shannon No. 1 and 2,	do.	1	60	. .	1	5	. . .	67	1	2	. . .	. . . .	3	1	7	74
Camp Hill,	do.	1	75	. . .	.	4	1	81		2	1	. . . .	2	. . . .	5	86
Cherry,	do.	1	37	2	2	2	. .	44	1	2	. . .	. . . .	1	. . . .	4	48
Cornell & Werling,	do.	1	210	12	4	12	. . .	239	1	4	4	. . . .	15	1	25	264
Dravo,	do.	1	70	2	2	3	1	79	1	1	. . .	. . . .	4	2	8	87
Enterprise,	do.	2	. . .	. . .	. . .	. . .	. . .	267	. . .	. . .	. . .	. . . .	. . .	. . .	23	290
Essen,	do.	1	125	4	2	5	2	139	1	3	1	. . . .	6	1	12	151
Fox,	do.	1	20	.	1	1	. . .	23	1	. . .	1	. . . .	1	. . .	3	26
Federal Spring,	do.	1	45	3	. .	3	2	54	. . .	. . .	. . .	. . . .	. . .	. . . .	4	58
Fort Pitt,	do.	1	50	5	2	4	1	63	1	2	. . .	. . . .	4	. . . .	7	70
First Pool Monongahela Gas Coal Company No. 1,	do.	1	18	. . .	1	2	. . .	22	1	. . . .	. . .	. . . .	5	1	7	29

Glendale,	do.	1	24			1		26	1				2		3	29	
Glasshouse,	do.		9		1	1		11								11	
Glenshaw,	do.	1	25	2	2	5		35	1				1	1	3	38	
Grant,	do.	1	90	10	3	12	3	119		1			6	1	8	127	
H. D. O'Neil,	do.	1	96		1	5		103							13	116	
Horner & Roberts No. 3 and 4,	do.	1	126	12	2	7	2	150		2	2		14	1	19	169	
Hasting's Slope,	do.	1	75	2	2	5		85	1	1	1		2	2	7	92	
Hays Street Run No. 2 and 3,	do.	2						264							27	291	
Idlewood,	do.	1	12		1	1		15					2		2	17	
Jefferson,	do.	1	172	6	2	11	3	195	1	1	2		13	1	18	213	
Jones,	do.	1	90			7		98		1			12	1	14	112	
Lovedale,	do.	1	85	4	5	7		102	2	2	3		8	1	16	118	
Leesdale,	do.	1	70	2		2	1	76	4	2			2	1	9	85	
Lower Walton,	do.	1	175		4	13		193	1	4	2		18	1	26	219	
Laurel Hill,	do.	2	300	18	6	20	8	354	2	4	12		20	2	40	394	
Montours,	do.	1	100	10	4	10	2	127		1	2		7		10	137	
Milesville,	do.	1	125	5		7	1	139		1	1		7	2	11	150	
Mansfield No. 1,	do.	1	100	12	3	5	1	122		3	4		12	1	20	142	
Mansfield No. 2,	do.	1	190	25	4	6	1	227		2			8	1	11	238	
McConnell,	do.	1	30	3	2	3		39		1			2	1	4	43	
National,	do.	1	93		2	6		102		3	2		5		10	112	
Natrona,	do.	1	12	1		3		17	1		2		1		4	21	
Nixon,	do.	1	60		2	3		66	1	2			1	1	5	71	
Old Eagle,	do.	1	120	4	4	8	2	139	1	2	2		10	1	16	155	
Ormsby,	do.	1	50	6	2	9	2	70	2	3	3		7	1	16	86	
Oak Ridge,	do.	1	90	8	2	4		105		2	1		3	1	7	112	
Ocean No. 2,	do.	1	235	7	3	10	1	257	1	2			8		11	268	
Ocean No. 4,	do.	1	162	8	3	8		182	1	1			10		12	194	
Pine Run No. 1 and 2,	do.	2	130	3	2	7	4	153	1	2	2		17	1	28	176	
Pacific,	do.	1	125	8	2	8		139	1	1			5		7	146	
Penny,	do.	1	50			6		57					4		4	61	
Powers No. 1 and 2,	do.	1	70	5	1	5	2	84	1	1	1		2		5	89	
Robbins,	do.	1	96	4	1	11	2	115	1	1	1		8	1	12	127	
Rock Run,	do.	1	91	5	1	5		103	1	1			10	1	13	116	
Street's Run,	do.	1						160							15	175	
Stone's,	do.	1	125		2	8	1	137	1	1	1		8	1	12	149	
Summer Hill,	do.	1	130	10	2	5	2	150	1	3			3	1	8	158	
Star,	do.	1	75		1	3		80		1			4	1	6	86	
Sanford No. 2,	do.	1	75	3	1	4	2	86	1	1			5	1	8	94	
Snowdon,	do.	1	25	6	1	2	2	37			1		3	1	5	42	
Upper Walton,	do	1	200		6	11		218	1	4	2		14	1	22	240	
Venture,	do.	2	80	20	5	4	1	112	2	1	4		5	2	14	126	
West Elizabeth,	do.	1	80	10	3	16		110	1	2			10	1	14	124	
Walton,	do.	2	200		6	10		218		3	3		15	1	22	240	
Willow Grove,	do.	1	100	15	3	10	2	131	1	1	1		8	1	12	143	
Wenona.	do.	1	15	2		1		19							3	22	
Total,		79	6,334	371	136	429	64	8,320	55	102	74		433	53	833	9,158	

TABLE No. 4.—List of fatal accidents occurring in and about the mines of the Seventh Bituminous Mine District for the year ended December 31, 1887.

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Widow.	No. of orphans.	Name of Colliery.	Location—County.	Nature and cause of accident.
Jan. 24,	Ludwig Fite,	Miner,	19	...	...	Beach Cliff,	Allegheny,	Killed by fall of slate while taking out props.
Mar. 19,	Peter Smit,	do.	22	...	...	Camden,	do.	Killed by falling slate while mining coal in his room.
Apr. 7,	Michael Jarvis,	do.	42	1	1	Willow Grove,	do.	Killed by fall of coal and slate while undermining the coal.
14,	George McBride,	do.	28	...	...	Hays Street Run,	do.	Killed by fall of horseback while mining in his room.
18,	Max Probims,	do.	28	1	1	Jefferson,	do.	Killed by fall of roof while gathering roof coal on top of fall.
30,	Thomas Jackson,	Miner boy,	16	...	...	Pacific,	do.	Kill by falling slate; was mining coal with his father.
May 2,	Thomas Lloyd,	Miner,	20	...	...	Grant,	do.	Fatally injured by fall of roof coal. Died May 7.
13,	William Bell,	do.	26	1	2	Pacific,	do.	Killed by fall of slate while mining coal in his room.
Nov. 8,	John Mitchell,	do.	31	1	4	Dravo,	do.	Killed by fall of slate; was taking out a room pillar.
17,	William Barrat,	Mule driver,	30	1	2	Summer Hill,	do.	Was thrown from the trip against side of entry and broke his neck.
21.	John Celers,	Miner,	40	1	4	Ocean No. 2,	do.	Fatally injured by falling slate. Died November 24.

TABLE No. 5—List of non-fatal accidents occurring in and about the mines of the Seventh Bituminous Mine District for the year ended December 31, 1887.

Date of accident.	Name of Person.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Jan. 11,	Robert White,		18	No,		Enterprise,	Allegheny,	Injured by cars passing over his foot.
18,	Frank Metz,	Miner,	50	Yes,		Castle Shannon,	do.	Slightly injured by fall of slate.
18,	E. C. Brown,	do.	41	Yes,		Federal Spring,	do.	Foot hurt by falling slate.
31,	John Jones,	Miner boy,	14			Horner and Roberts No. 4,	do.	Arm broke by fall of coal.
Feb. 10,	Robert Greece,	do.	12			Summer Hill,	do.	Arm taken off by falling under full coal car.
14,	Thos. Rothwell,	do.	15			Horner and Roberts No. 4,	do.	All the fingers cut off left hand by falliug slate.
Mar. 3,	Robert Wilson,	Driver,	22			Sanford No. 2,	do.	Slightly hurt by moving cars.
5,	Edward Strauser,	Miner boy,	14			Alliquippa,	do.	Arm broke by moving car.
12,	Hugh Lavin,	Miner,				Cornell and Werling,	do.	Foot hurt by falling slate.
12,	Edwin Williams,	do.	37	No,		Lower Walton,	do.	Foot hurt by fall of slate.
30,	William Landers,	do.	21	No,		Ocean No. 2,	do.	Leg broke by fall of coal and slate,
31,	Constantine McGregger,	do.	21	No,		Alliquippa,	do.	Slightly hurt by fall of horseback.
Apr. 19,	Henry Powell,	do.	40	Yes,		Laurel Hill,	do.	One rib broke by fall of coal.
May 2,	William Phillips,	Driver,	22	Yes,		Beach Cliff,	do.	Foot hurt by cars passing over it.
8,	Edward Sweeny,	Miner,	52	Yes,		Laurel Hill,	do.	Burnt by fire-damp.
16,	Thomas Evans,	do.	30	Yes,		Mansfield No. 1,	do.	Arm broke by fall of slate.
21,	Benjamin Meredith,	Miner boy,	15			Lower Walton,	do.	Foot hurt by fall of coal.
21,	D. Watkins,		15			Amity,	do.	Slightly hurt by moving cars.
23,	Edward McGuire,	Miner,	60	Yes,		Rock Rum,	do.	Leg broken by fall of slate.
June 11,	Adam Best,	do.	40			Amity,	do.	Hurt slightly by fall of coal.
—,	John Muningstar,	Miner boy,	16	No,		Cornell and Werliug,	do.	Leg broke by fall of siate.
11,	Lenea Closkie,	Miner,	30	No,		Summer Hill,	do.	Injured by falling slate.
July 8,	Wm. Nostheg,	do.	19	No,		Mansfield No. 2,	do.	Injured by fall of horseback.
11,	George Watson,	do.	36	Yes,		Buena Vista,	do.	Seriously injured by falling slate.
19,	Name not stated,	do.				Essen,	do.	Slightly injured by fall of slate.
19,	Nicholas Gessner,	do.	29	No,		Drova,	do.	Leg broken by falling slate.
Aug. 8,	D. C. Riley,	do.	31	Yes,		Mansfield No. 1,	do.	Leg hurt by fall of coal.
18,	George Barnes,	do.	60	Yes,		Alliquippa,	do.	Ankle dislocated by fall of horseback.

Sept. 6,	Wm. Clark,	do.		29	Yes,	Pacific,	do.	Injured by fall of slate.
12,	John Robison,	do.				Beadling,	do.	Slightly burned by explosion of gas.
19,	George Snider,	do.		21	No,	Enterprise,	do.	Foot hurt by moving cars.
28,	James Cherrey,	do.		62	Yes,	Stones,	do.	Sight of one eye destroyed; was struck with spark from wedge.
Oct. 2,	John Hulliger,	do.		31	No,	Willow Grove,	do.	Seriously injured by fall of slate.
5,	Chas. Fuller,	do.		26	No,	Montours,	do.	Seriously hurt by fall of slate.
20,	James Harville,	do.		30	Yes,	Willow Grove,	do.	Received a scalp wound by fall of slate.
20,	Michael Smith,	do.		23	No,	Bellwood,	do.	Seriously injured by falling slate.
Nov. 3,	Wm. McKerson,	do.		33	Yes,	Glendale,	do.	Hurt by fall of slate
8,	John Smith,	do.				Sanford No. 2,	do.	Slightly hurt by falling slate.
16,	Chas. Brown,	do.		36	Yes,	Laurel Hill,	do.	Arm broken by falling slate.
25,	George Florey,	do.			Yes,	Grant,	do.	Hurt by falling slate.
28,	David Davies,			21	No,	Beach Cliff,	do.	Slightly hurt by coal cars.
30,	Enoch Thomas,	Miner,				Glendale,	do.	Leg broken by falling slate.
Dec. 2,	Absalom Worthington,	do.		22	No,	Beach Cliff,	do.	Hand crushed between car and post.

EIGHTH BITUMINOUS DISTRICT.

Hon. THOMAS J. STEWART,

Secretary of Internal Affairs, Harrisburg, Pa.:

SIR: I have the honor to submit to you my third annual report for the Eighth Bituminous Mine District of Pennsylvania for the year ending December 31, 1887. This district comprises all of Centre and Clearfield counties, with the exception of that portion of Clearfield county contiguous to Du Bois and the Bell's Gap railroad.

The year that is past has been a year of unusual activity in the coal business in this district as compared with former years. Few labor troubles (and those that did take place were local) have interrupted the regular workings of the mines. Had they been supplied with cars regularly the production would have increased at least 1,000,000 tons.

You will see from the statistical part of this report that the increase of 1887 over 1886 is 1,362,435 tons. The total number of employés has also increased 1,195.

There are ninety-six mines in the district. They have all been working more or less during the year. They have been kept in reasonably good condition. The mining law has been generally observed, and necessary improvements are being made from time to time.

There have been 14 fatal accidents, an increase of 6 over 1886; 33 non-fatal accidents, an increase of 3 over 1886.

This district continues to increase notwithstanding the abandonment of four mines, namely, Webster, Elizabeth, Logan Ridge and Yorkshire. Eight new mines are in course of opening in Clearfield county and two in Centre, whose names and titles of companies or operators have not been received at this writing.

Abstract of Mining Statistics for the Year Ending December 31, 1887.

	Tons.
Amount of coal produced,	4,829,017
Amount produced in 1886,	3,466,582
Increase in 1887,	1,362,435
Amount of coal shipped,	4,678,815
Amount of coal shipped in 1886,	3,426,634
Increase of shipments, 1887,	1,152,181
Amount of coke produced,	153,941

Number of mines operated during the year,	96
Number of mines abandoned,	4
Number of miners employed,	5,833
Number of miners' boys employed,	599
Number of persons employed inside,	7,147
Total number employed outside,	633
Total number of persons employed,	7,780
Average number of days worked (96 mines),	181.4
Price paid for mining 2,240 pounds,	$0 50
Number of horses and mules,	668
Number of coke ovens in operation,	480
Number of coke employés,	284
Number of kegs of powder reported,	11,858
Number of fatal accidents during the year,	14
Number of non-fatal accidents during the year,	33

Causes of Fatal Accidents.

By falls of coal,	6	
By falls of rock,	4	
By wagons,	4	
Total,		14

Causes of Non-Fatal Accidents.

By falls of coal,	14	
By falls of rock,	5	
By wagons,	10	
By powder explosion,	3	
By wire line,	1	
Total,		33
Grand total,		47

Number of tons of coal mined per fatal accident,	344,929
Number of tons of coal mined per non-fatal accident,	146,333.82
Number of widows caused by fatal accidents,	4
Number of orphans caused by fatal accidents,	11

There has been one fatal acccident for every 555.7 persons employed, and one non-fatal accident for every 235.75 persons employed.

Yours respectfully,

JOHN M. WATT.

PHILLIPSBURG, CENTRE COUNTY, PA.,
February 24, 1888.

Description of Mines.

Houtzdale District.—The mines in this district have made considerable progress in the methods of mining in the past year. The old style of single-entry is fast giving way to the double-entry system, which is not only of great advantage to the individual operator by enabling him to open up his mines more expeditiously and in the end more economically; it is also of great importance to the miner, as the ventilation of the mine is increased, the drainage facilitated and the general sanitary condition of the mine improved. Two collieries in the Houtzdale district were worked out during the year, namely, Webster No. 1, and Elizabeth No. 1 and Yorkshire mines have been both opened and abandoned during the year, while five new mines were opened or in the course of being opened, namely, Sterling No. 3 and 4, Atlantic No. 2, Elizabeth, Ramey; and Wigton & Sons are opening a new drift mine near Amiville.

Osceola District.—This part of the district is in reasonably good condition. Logan Ridge mine has been worked out and abandoned during the year, while a new drift is being opened at Retort, Centre county.

Phillipsburg District.—The mines here are all in good condition with the exception of Derby, whose ventilation and drainage were poor when last visited. Its reported condition now is that it is improved since that time.

Hawk Run District including *Morrisdale.* There are six large mines in this district. They are all in fair condition, with Rothrock mine first-class. This mine is wrought mostly with the improved Lag or Leechner coal cutting machine. Both coal cutting and pumping is done with compressed air.

Beech Creek District comprises all of the colleries operated from Snow Shoe to Gazzam on Beech Creek railroad. I have always found the mines in this section in good condition. What is known as the "B" vein is operated on at Peale, Wells Run and Kyler. O'Shanter is working the "C" vein, which is in good condition. Here a new company is commencing to open up the same vein ("C") near O'Shanter. An excellent quality of coke is made from the ("B") vein at Peale and Kyler.

Snow Shoe District.—The mines in this section are in good condition. One mine has been abandoned this year and one old one is being opened up and two new ones projected.

Karthaus District comprises two colleries, namely, Karthaus and Cataract. They are both in fair condition, and laboring under the difficulty of defective drainage. Both operations have spent considerable amount of money in driving water courses, and apparently have not reached the lowest part of their respective basins.

TABLE No. 1.—Showing location of collieries in the Eighth Bituminous Mine District.

NAME OF COLLIERY.	Name of Operator.	Location—County.	Name of Superintendent.	Postoffice Address.
Atlantic Nos. 1 and 2,	Berwind White Coal Mining Company,	Clearfield,	W. A. Crist,	Osceola Mills, Clearfield county.
Ashland,	do. do. do. do. do.	do.	Daniel Jones,	Brisbin, Clearfield county.
Atalanta Nos. 1 and 2,		do.		
Ashman,		do.		
Alexander,	Medora Coal Company,	do.	Thomas E. Estep,	Madera, Clearfield county.
Alder Run,	Alder Run Coal and Coke Company,	do.	W. E. Wallace,	Clearfield.
Black Diamond,	W. J. Jackson & Co.,	Centre.		
Baltic,	Baltic Coal Company,	Clearfield,	H. K. Grant,	Philipsburg, Centre county.
Coaldale Nos. 3, 4, 5 and 6,	Coaldale Coal Company,	do.	D. W. Holt,	do. do. do.
Colorado,	Jackman & Ellsworth,	do.	E. H. Ellsworth,	do. do. do.
Cataract,	Berwind White Coal Mining Company,	do.	A. J. Cook,	Bellefonte, do. do.
Central,	T. C. Heims,	Centre,	T. C. Heims,	Osceola Mills, Clearfield county.
Columbia No. 1,	Mitchell, Lazzard & Co.,	Clearfield,	J. L. Mitchell,	Tyrone, Blair county.
Columbia No. 2,	do. do. do.	Centre,	do.	do. do. do.
Cuba,		Clearfield.		
Decatur,	John Nuttal & Co.,	do.	John Nuttall,	Philipsburg, Centre county.
Derby,	Thomas Barnes & Bros.,	do.	Thomas Barnes,	do. do. do.
Drane,	T. C. Heims & Co.,	do.	T. C. Heims,	Osceola Mills, Clearfield county.
Empire,	Empire Coal Company,	do.	John Ashcroft,	Philipsburg, Centre county.
Elizabeth Nos. 1 and 2,	Elizabeth Coal Company,	do.	C. F. Blair,	Tyrone, Blair county.
Elizabeth No. 3,	do. do. do.	Centre,	do.	do. do. do.
Eureka Nos. 2, 5, 6, 8 and 10,	Berwind White Coal Mining Company,	Clearfield,	W. A. Crist,	Osceola Mills, Clearfield county.
Eureka No. 3,		do.	Alex. Gray,	Sobelski, Clearfield county.
Excelsior Nos. 1, 2, 3 and 4,	H. G. Fisher,	do.	Thomas Ritchards,	Houtzdale, Clearfield county.
Franklin Nos. 1 and 2,	Berwind White Coal Mining Company,	do.	W. A. Crist,	Osceola Mills, Clearfield county.
Ferndale,	Ferndale Coal Company,	do.	John Maurice,	Brisbin, Clearfield county.
Grassflat Nos. 9, 10 and 11,	Clearfield Bituminous Coal Company,	do.	Robert A. Shillingford,	Reale, Clearfield county.
Gazzam,	do. do. do. do.	do.	do.	do. do. do.
Glenwood No. 1,	William Morris & Co.,	do.	C. Campbell,	Altoona, Blair county.
Glenwood No. 2,	Rees & Long,	do.		Philipsburg, Centre county.
Hudson,	R. B. Wigton & Son,	do.	W. H. Wigton,	do. do. do.
Hawk Run,	Jones & Mull,	do.	John Mull,	do. do. do.
Irvona No. 2,	Irvona Coal Company,	Centre,	John McNulty,	Coalport, Clearfield county.
Keystone Nos. 1 and 2,	Keystone Coal Company,	Clearfield,	John Walton,	Philipsburg, Centre county.
Karthaus,	Berwind White Coal Mining Company,	do.	A. G. Spears,	Karthaus, Clearfield county.
Kyler,	R. C. Fishburn,	do.	R. C. Fishburn,	Munson Station, Clearfield county.
Lancashire Nos. 1 and 2,	T. Barnes & Bros.,	do.	Thomas Barnes,	Philipsburg, Centre county.
Laurel Run Nos. 1 and 2,	J. M. Bacon & Co.,	do.	G. W. McGaffy,	do. do. do.
Logan,	H. Liveright,	do.	H. Liveright,	Osceola Mills, Clearfield county.
Lenders Slope,	Lender Bros.,	do.	G. W. Lender,	Munson's Station, Clearfield county.
Logan Ridge,	A. I. Smith,	do.	James Leonard,	Osceola Mills, Clearfield county.
Loraine,	Reahart Bros.,	do.	David E. Conrad,	Houtzdale, Clearfield county.
Morrisdale,	R. B. Wigton & Sons,	do.	W. H. Wigton,	Philipsburg, Centre county.
Mapleton,	H. Liveright & Co.,	do.	H. Liveright,	Osceola Mills, Clearfield county.
Mt. Vernon Nos. 1, 2 and 5,	Clearfield C. C. Company,	do.	John Langdon,	Huntingdon, Pa.
Moshannon,	do. do. do.	do.	do.	do.

Ocean Nos. 1, 2 and 3,	Berwind White Coal Mining Company,	do.	W. A. Crist,	Oeceola Mills, Clearfield county.
O'Shanter,	O'Shanter Coal Company,	do.	James Kerr,	Clearfield, Pa.
Pardee,	W. P. Duncan & Co.,	do.	W. P. Duncan,	Philipsburg, Centre county.
Pine Creek Nos. 1 and 2,	Whitehead Coal and Coke Company,	do.	John Whitehead,	Huntingdon, Pa.
Pacific Nos. 1 and 2,	Berwind White Coal Mining Company,	do.	W. A. Crist,	Osceola Mills, Clearfield county.
Reading,	H. Liveright,	do.	H. Liveright,	do. do. do.
Rothrock,	R. B. Wigton & Sons,	do.	W. H. Wigton,	Philipsburg, Centre county.
Sterling,	Robert H. Powell & Co.,	do.	James Campbell,	Houtzdale, Clearfield county.
Sommerville,	J. L. Sommerville & Co.,	Centre,	J. L. Sommerville,	Snow Shoe, Centre county.
Sugar Camp Nos. 1, 3, 4 & 8,	Lehigh Valley Coal Company,	do.	W. A. Lathrope,	do.
Sobeiski,	do. do. do.	Clearfield,	do.	Sobeiski, Clearfield county.
Tunnel Mines Nos. 1, 2 & 3,	Clearfield Bituminous Coal Company,	Centre,	Robert A. Shillingford,	Reale, Clearfield county.
Vulcan,	R. B. Wigton & Sons,	Clearfield,	W. H. Wigton,	Philipsburg, Centre county.
Victor Nos. 1, 2 and 3,	Victor Coal Company,	do.	John Walton,	do. do.
Webster No. 4,	do. do.	do.	James Minds,	Ramey, Clearfield county.
Wells Run,	Sommerville & Co.,	do.	J. L. Sommerville,	Snow Shoe, Centre county.
Woodland,	do.	do.		
Yorkshire,	T. Barnes & Co.,	do.	Thomas Barnes,	Philipsburg, Centre county.

TABLE No. 2.—Gives the total number of tons of coal mined and tons of coke produced in each colliery, number of days worked, number of employés, number of persons killed and injured, number of kegs of powder used, etc., in the Eighth Bituminous Mining District for the year ending December 31, 1887.

NAMES OF COLLIERIES.	LOCATION.	Total production in tons of coal.	Total production in tons of coke.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Number coke ovens.	Number coke employees.
Atlantic No. 1 and 2,	Clearfield county,	79,239		78,639	184	171					10			
Ashland,	do.	27,755		27,755	260	47					6			
Atalanta No. 1 and 2,	do.	62,729		62,729	170	80		4			6			
Ashman,	do.	9,595		9,595	96	30			40		2			
Alexander,	do.	6,568		6,568	113	26			67		1			
Alder Run,	do.	1,352	1,680	1,352	200	59			72	1	3		30	6
Black Diamond,	Centre county,	45,476		45,000	275	77			140	1	4			
Baltic,	Clearfield county,	41,747		41,747	219	75					7			
Coaldale No. 3,	do.	139,364		139,364	250	222				3	15			
Coaldale No. 4,	do.	48,670		48,670	257	56					4			
Coaldale No. 5,	do.	171,294		171,294	247	245				3	13			
Coaldale No. 6,	do.													
Cataract,	do.	118,052		118,052	244	209					10			
Central,	Centre county,	69,000		69,000	203	151			233		6			
Columbia No. 1,	Clearfield county,	73,233		73,233	236	90		1	327		10			
Columbia No. 2,	Centre county,	52,079		52,079	193	86	1		200		9			
Colorado,	Clearfield county,	81,365		81,365	235	111			360		6			
Cuba,	do.	15,201		15,201	213	53			153		4			
Decatur,	do.	36,000		36,000	160	53					7			
Derby,	do.	36,971		36,970	217	63			370		5			
Drane,	do.	40,000		40,000	208	77			240		6			
Empire,	do.	111,635		124,019	240	221		2	500	2	10			
Elizabeth No. 1,	do.	12,000		12,000	160	7					1			
Elizabeth No. 2,	do.	42,000		42,000	260	86			250		4			
Elizabeth No. 3,	Centre county,	42,000		42,000	290	85		2	300		8			
Eureka No. 2,	Clearfield county,	211,756		201,558	251	256	1	3			26			
Eureka No. 3,	do.	6,915		6,915	119	13			60		3			

Eureka No. 5,	do.	51,968		51,047	260	88		2		6	14			
Eureka No. 6,	do.	58,422		58,422	257	80					12			
Eureka No. 8,	do.	17,785		17,785	109	44					2			
Eureka No. 10,	do.	144,676		144,067	240	207	1			8	12			
Excelsior No. 1,	do.	19,000		19,000	255	15					1			
Excelsior No. 2,	do.	22,442		22,442	275	36		1			2			
Excelsior No. 3,	do.	78,376		78,376	245	101				4	9			
Excelsior No. 4,	do.	9,077		9,077	115	27					2			
Franklin No. 1 and 2,	do.	164,013		163,102	210	219	1	1		1	18	1		
Ferndale,	do.	9,957		9,957	153	25					1			
Grassflat No. 9,	do.										4			
Grassflat No. 10.														
Grassflat No. 11,	do.	11,500		11,500	230	210		1	1,200		14		100	50
Gazzam,	do.	79,155		79,264	229	134	1		600		8	1		
Glenwood No. 1,	do.	101,179		101,179	250	116		2	239		19			
Glenwood No. 2,	do.	37,500		37,500	291	54			110		4			
Hudson,	do.	6,000		6,000	120	18					4			
Hawk Run,	do.	23,700		23,700	216	55			206		6			
Irvona No. 2,	do.	2,400		2,400	34	51			10		2			
Keystone No. 1 and 2,	do.	8,884		8,884	160	21					3			
Karthaus,	do.	70,000		70,000	215	96			300		7			
Kylor,	do.	40,776	12,542	22,568	261	61		1	640	1	6		30	10
Lancashire No. 1,	do.	57,514		57,514	238	95			260		11			
Lancashire No. 2,	do.	32,118		32,118	198	82			325		4			
Laurel Run No. 1 and 2,	do.	46,150		46,150	190	57	1				5			
Logan,	do.	90,479		93,336	281	102		1	270		13			
Lender's Slope,	do.													
Loraine,	do.	45,081		45,081	263	57			180		5			
Logan Ridge,	do.	8,979		8,979	138	28			36		3			
Morrisdale,	do.	120,000	30,000	25,000	218	160		1	450	1	15		60	44
Moshannon,	do.	31,071		31,071	157	76			75		9			
Mount Vernon No. 1,	do.	25,506		25,506	116	50			50		4			
Mount Vernon No. 2,	do.	1,600		1,600	40	9								
Mount Vernon No. 5,	do.	105,704		105,704	230	177	1	2	160	2	12			
Mapleton,	do.	34,488		44,400	249	50			159		5			
Ocean No. 1,	do.	57,643		56,807	247	101		1			10			
Ocean No. 2,	do.	45,773		44,273	214	83					7			
Ocean No. 3,	do.	31,342		31,342	128	82					5			
O'Shanter,	do.	15,003		15,003	182	75			130		4			
Pacific No. 1,	do.	179,813		179,412	261	219				1	27			
Pacific No. 2,	do.	136,042		136,042	253	169					15			
Pardee,	do.	217,601		217,601	250	263	1		850	2	18			
Reading,	do.	22,567		22,658	238	40			44		3			
Rothrock,	do.	175,000		175,000	247	178		6	800	3	14			
Sterling No. 1,	do.	226,770		262,000	289	348	2	2		6	33	2		
Sterling No. 2,	do.	29,661		29,661	187	22					5			
Sommervilles No. 1 and 2,	Centre county,	57,210		57,210	274	66					7			
Sugar Camp No. 1,	do.	76,628		76,372	239	110		1			6			
Sugar Camp No. 3,	do.	110,437	46,768	35,291	200	140	1			2	6	1	200	101
Sugar Camp No. 4,	do.	1,176		1,176	30	17					1			
Sugar Camp No. 8,	do.	18,666	12,941		301	28					1		65	19
Sobeiski,	Clearfield county,	8,500		8 500	150	11					2			

TABLE No. 2—Continued.

NAME OF COLLIERIES.	LOCATION.	Total production in tons of coal.	Total production in tons of coke.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Number coke ovens.	Number coke employees.
Springville,	Clearfield county,	7,370		7,370	200	10					1			
Tunnel Mines No. 1,	Centre county,	83,164		83,164	188	83					1			
Tunnel Mines No. 2,	do.					37					4			
Vulcan,	Clearfield county,	50,000		50,000	249	96	1		400		8	1		
Victor No. 1,	do.	55,573		55,573	186	119					5			
Victor No. 2,	do.	17,978		17,978	165	38					4			
Victor No. 3,	do.	22,114		22,114	225	43					2			
Webster No. 4,	do.	57,097		57,097	277	99		2	370	1	8			
Wolf's Run,	do.	29,904		29,287	180	61			300		4			
Yorkshire,	do.	7,500		7,500	150	4					1			
Total,														

TABLE No. 3.—Showing the number of each class of employés at each colliery in the Eighth Bituminous Mine District during the year 1887.

Names of Collieries.	Location.	Number of Persons Employed Inside.							Number of Persons Employed Outside.							Grand totals—inside and outside.
		Inside foreman or mine boss.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Door boys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All company men.	Superintendent, bookkeepers and clerks.	Total outside.	
Atlantic No. 1 and 2,	Clearfield county,	1	101	28	8	10	5	153	. .	2	1	. . . .	14	1	18	171
Ashland,	do.	1	36	3	. . .	3	1	44	. . .	. . . .	. . .	. . . .	2	1	3	47
Atalanta No. 1 and 2,	do.	1	50	5	. . .	3	1	62	. . .	1	. . .	. . . .	11	6	18	80
Ashman,	do.	1	25	. . .	. . .	2	. . .	28	. . .	1	. . .	. . . .	. .	1	2	30
Alexander,	do.	1	21	2	. . .	1	. . .	25	. . .	. . .	. . .	. . . .	1	. . . .	1	26
Alder Run,	do.	1	39	. .	10	2	. . .	54	. . .	1	. .	. . . .	3	1	5	59
Black Diamond,	do.	1	59	3	. .	4	3	70	. . .	1	1	. . . .	3	2	7	77
Baltic,	do.	1	59	5	5	5	1	71	. . .	1	.	. . . .	2	1	4	75
Coaldale No. 3,	do.	1	204	. . .	. .	. . .	. . .	205	1	2	2	. . . .	10	2	17	222
Coaldale No. 4,	do.	1	51	. . .	. . .	. . .	. . .	52	. . .	1	. . .	. . . .	3	. . . .	4	56
Coaldale No. 5,	do.	1	212	. . .	. .	. . .	. . .	213	1	2	1	. . .	5	3	12	245
Coaldale No. 6,	do.	. .	. . . .	. . .	. .	. .	. . .	. . . .	. . .	. . .	. . .	. . . .	. .	. . .	. .	. . . .
Cataract,	do.	1	149	16	10	13	6	195	. . .	3	. .	. . . .	8	3	14	209
Central,	Centre county,	1	108	7	. . .	7	. . .	124	. . .	2	. .	. . . .	3	2	7	131
Columbia No. 1,	Clearfield county,	1	63	6	1	6	3	85	. . .	1	. .	. . . .	2	2	5	90
Columbia No. 2,	Centre county,	1	68	3	2	6	2	82	. . .	1	. . .	. . . .	2	1	4	86
Colorado,	Clearfield county,	1	79	17	1	6	2	106	. . .	1	. . .	. . . .	4	. . . .	5	111
Cuba,	do.	1	41	5	3	3	. . .	53	. . .	. .	. . .	. . . .	. .	. . . .	. . .	53
Decatur,	do.	1	31	3	2	3	2	47	. . .	2	. . .	. . . .	2	2	6	53
Derby,	do.	1	49	6	. . .	4	1	61	. . .	. .	. . .	. . . .	2	. . .	2	63
Drane,	do.	1	59	3	. . .	4	3	70	. . .	2	. . .	. . .	3	2	7	77
Empire,	do.	1	174	20	. .	10	2	207	. . .	2	2	. . .	8	2	14	221
Elizabeth No. 1,	do.	. . .	2	1	3	1	. . .	4	. . .	. . .	. .	. . . .	. .	3	3	7
Elizabeth No. 2,	do.	1	69	10	. . .	3	. . .	83	. .	. . .	. . .	. . . .	. . .	3	3	86
Elizabeth No. 3,	Centre county,	1	64	5	. .	4	3	77	. . .	1	. . .	. . .	4	3	8	85
Eureka No. 2,	Clearfield county,	1	183	42	5	13	2	246	. . .	2	. . .	. . . .	7	1	10	256
Eureka No. 3,	do.	1	9	. . .	. . .	2	. . .	12	. . .	. . .	. . .	. . . .	1	1	2	14
Eureka No. 5,	do.	1	62	3	4	5	4	78	. .	1	2	. . . .	6	1	10	88
Eureka No. 6,	do.	. . .	55	8	3	5	2	73	. . .	1	. . .	. . . .	5	1	7	80
Eureka No. 8,	do.	1	31	1	1	1	1	39	. . .	1	. . .	. . . .	3	1	5	44
Eureka No. 10,	do.	1	143	25	5	13	3	195	. .	2	1	. . . .	8	1	12	207
Excelsior No. 1,	do.	. . .	12	. . .	1	1	. . .	14	. .	. . . .	. .	. . . .	. .	1	1	15

TABLE No. 3—Continued.

NAMES OF COLLIERIES.	LOCATION—COUNTY.	NUMBER OF PERSONS EMPLOYED INSIDE.							NUMBER OF PERSONS EMPLOYED OUTSIDE.							Grand totals—inside and outside.
		Inside foreman or mine boss.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Doorboys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All company men.	Superintendent, bookkeepers and clerks.	Total outside.	
Excelsior No. 2,	Clearfield county,	1	29	1	. . .	2	1	34	. . .	. . .	. . .	. . . .	1	1	2	36
Excelsior No. 3,	do.	1	84	1	2	3	2	93	. . .	1	2	. . . .	3	2	8	101
Excelsior No. 4,	do.	1	19	. .	. . .	2	. . .	22	. . .	1	. . .	. . . .	3	1	5	27
Franklin No. 1 and 2,	do.	1	161	12	9	17	4	204	. . .	2	1	. . . .	11	1	15	219
Ferndale,	do.	1	15	3	. .	3	. . .	22	. . .	. . . .	. . .	. . . .	3	1	4	26
Grassflat No. 9,	do.	1	33	1	2	1	1	39	. . .	. . . .	. . .	. . . .	. . .	. . . .	. . . .	39
Grassflat No. 10 (idle),	do.	. .	. . . .	. . .	. . .	. .	. . .	. . . .	. . .	. . . .	. . .	. . . .	. . .	. . . .	. . . .	. . .
Grassflat No. 11,	do.	1	141	6	7	9	9	173	. . .	5	. . .	. . . .	17	6	28	201
Gazzam,	do.	1	91	12	5	6	3	118	. . .	3	2	. . . .	9	2	16	134
Glenwood No. 1,	do.	1	94	6	1	6	. .	108	. . .	1	. . .	. . . .	5	2	8	116
Glenwood No. 2,	do.	1	44	2	. . .	2	1	50	. . .	. . . .	. . .	. . . .	4	1	5	55
Hudson,	do.	1	12	1	. .	2	1	17	. . .	. . . .	. . .	. . . .	. . .	1	1	18
Hawk Run,	do.	1	39	2	2	3	3	50	. . .	1	. . .	. . . .	2	2	5	55
Irvona No. 2,	Centre county,	1	34	8	. .	2	1	46	. . .	1	. . .	. . . .	3	1	5	51
Keystone No. 1 and 2,	Clearfield county,	. .	18	. .	.	2	.	20	. . .	1	. . .	. . . .	. . .	. . . .	1	21
Karthaus,	do.	1	69	4	5	5	2	86	. . .	1	. .	. . . .	7	2	10	96
Kyler,	do.	1	40	1	2	4	2	50	. . .	2	1	. . . .	6	2	11	61
Lancashire No. 1,	do.	1	69	12	. .	4	3	89	. . .	1	. . .	. . . .	4	1	6	95
Lancashire No. 2,	do.	1	64	6	. . .	4	3	78	. . .	1	. . .	. . . .	3	. . . .	4	82
Laurel Run No. 1 and 2,	do.	1	38	6	. . .	3	2	50	. . .	2	. . .	. . . .	3	2	7	57
Logan,	do.	1	71	14	1	7	3	97	. . .	1	. . .	. . . .	2	2	5	102
Lender's Slope,	do.	. . .	. . . .	. . .	. . .	. . .	. . .	. . .	. . .	. . . .	. . .	. . . .	. .	. . . .	. . . .	. . .
Loraine,	do.	1	42	8	. . .	4	. .	55	. . .	. . . .	. . .	. . . .	1	1	2	57
Logan Ridge,	do.	1	15	4	1	2	2	25	. . .	. . . .	. . .	. . . .	3	. . . .	3	28
Morrisdale,	do.	1	134	5	2	9	1	152	. . .	2	1	. . . .	4	1	8	160
Moshannon,	do.	1	58	6	1	5	1	72	. . .	1	. . .	. . . .	2	1	4	76
Mount Vernon No. 1,	do.	1	35	5	1	4	2	48	. . .	1	. . .	. . . .	. . .	1	2	50
Mount Vernon No. 2,	do.	. . .	8	.	. .	1	. . .	9	. . .	. . . .	. . .	. . . .	. . .	. . . .	. . . .	9
Mount Vernon No. 5,	do.	1	137	15	3	11	3	170	. . .	1	1	. . . .	4	1	7	177

Mapleton,	do.	1	35	6	1	3	1	47	...	1	...	...	1	1	3	50
Ocean No. 1,	do.	1	66	11	5	5	2	90	...	1	...	...	9	1	11	101
Ocean No. 2,	do.	1	53	8	3	5	4	74	...	1	2	...	5	1	9	83
Ocean No. 3,	do.	1	54	11	2	3	2	73	...	1	...	...	7	1	9	82
O'Shanter,	do.	1	56	5	...	3	1	66	...	1	...	...	5	3	9	75
Pacific No. 1,	do.	1	115	27	3	8	3	157	...	1	...	...	10	1	12	169
Pacific No. 2,	do.	1	158	25	4	12	4	204	...	1	1	...	12	1	15	219
Pardee,	do.	1	211	9	...	15	10	246	...	2	2	...	10	3	17	263
Reading,	do.	1	30	4	1	2	...	38	...	1	...	...	...	1	2	40
Rothrock,	do.	1	131	4	15	11	4	166	...	3	3	...	5	1	12	178
Sterling No. 1, 3 and 4,	do.	1	221	53	...	17	18	310	...	6	10	...	20	2	38	348
Sterling No. 2,	do.	1	15	2	...	2	...	20	...	1	...	...	1	...	2	22
Sommervilles No. 1 and 2,	Centre county,	1	41	10	2	5	2	61	...	1	...	...	3	1	5	66
Sugar Camp No. 1,	do.	1	74	9	1	5	1	91	...	2	...	...	17	...	19	110
Sugar Camp No. 3,	do.	1	92	14	1	4	2	114	...	2	2	...	19	3	26	140
Sugar Camp No. 4,	do.	...	14	1	1	1	...	17	...	...	...	...	...	...	...	17
Sugar Camp No. 8,	do.	1	18	1	3	2	...	25	...	1	...	...	2	...	3	28
Sobeiski,	Clearfield county,	...	9	...	...	2	...	11	...	...	...	...	...	...	...	11
Spring Hill,	do.	...	9	...	...	...	...	9	...	...	...	...	...	1	1	10
Tunnel Mines No. 1,	Centre county,	1	32	1	1	1	1	37	...	...	...	...	...	...	...	37
Tunnel Mines No. 1,	do.	...	60	2	2	3	3	70	...	2	...	...	11	...	13	83
Vulcan,	Clearfield county,	1	79	2	1	5	2	90	...	1	...	...	4	1	6	96
Victor No. 1,	do.	1	94	5	1	5	2	108	...	1	2	...	6	...	9	117
Victor No. 2,	do.	1	24	3	1	2	1	32	...	1	...	...	2	...	3	35
Victor No. 3,	do.	1	29	3	1	4	2	40	...	1	...	...	2	...	3	43
Webster No. 4,	do.	1	79	5	...	5	...	90	...	1	1	...	6	1	9	99
Well's Run,	do.	1	42	4	1	4	1	53	...	3	...	...	4	1	8	61
Yorkshire,	do.	...	3	1	...	...	...	4	...	...	...	...	...	...	...	4
Total,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

TABLE No. 4.—List of fatal accidents occurring in and about the mines of the Eighth Bituminous Mine District for the year ended December 31, 1887.

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Widow.	No. of orphans.	Name of Colliery. Location—County.	Nature and Cause of Accident.
Jan. 12,	Frank Weston,,	Miner,	36	1	3	Cuba, Clearfield county,	Killed by fall of coal.
14,	Michael Dougherty,	Trapper,	13	...	...	Franklin, Clearfield county,	Killed by being crushed by a car.
Mar. 29,	Petro Babock,	Miner,	23	1	...	Coaldale No. 4, Clearfield county,	Killed by a fall of coal.
Apr. 21,	Patrick Lahive,	do.	28	...	.	Sterling No. 1, Clearfield county,	Killed by a fall of coal.
Nov. 12,	John Bohowiski,	do.	46	1	...	Vulcan, Clearfield county,	Killed by a fall of rock.
Dec. 2,	Westley Tonner,	do.	24	...	...	Gazzan, Clearfield county,	Killed by a fall of rock.
May 20,	Joseph Bateman,	do.	17	...	...	Columbia No. 2, Clearfield county,	Killed by a fall of rock.
11,	Byron Alfred Thomas,	Trapper,	12	...	.	Laurel Run No. 1, Clearfield county,	Killed by cars.
16,	Joseph Howalk,	Miner,	.	1	5	Mount Vernon No. 5, Clearfield county,	Killed by a fall of coal.
Aug. 16,	William Metherel,	do.	15	...	...	Eureka No. 10, Clearfield county,	Killed by a car.
19,	John Donely,	Driver,	23	1	1	Sugar Camp No. 3, Centre county,	Killed by a mine wagon.
23,	Benner Holobaugh,	Miner,	23	1	1	Pardee, Clearfield county,	Killed by a fall of coal.
Oct. 20,	John Sanstrum,	do.	51	...	...	Eureka No. 2, Clearfield county,	Crushed by falling roof.
Nov. 11,	Daniel Lundy,	do.	13	...	...	Sterling No. 1, Clearfield county,	Killed by fall of roof.

TABLE No. 5.—List of non-fatal accidents occurring in and about the mines of the Eighth Bituminous Mine District for the year ended December 31, 1887.

Date of accident.	Name of Person.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Jan. 11,	James McIntyre,	Miner,	44	M.		Excelsior No. 2,	Clearfield,	Hand hurt by a fall of roof.
17,	Samuel Johnson,	do.	42	M.		Glenwood,	do.	Hurt while sitting by a lump of coal that was being broken up.
Feb. 3,	Larry Long,	do.	45	M.		Ocean No. 1,	do.	Right foot hurt by fall of rock while mining.
18,	John Poracknavil,	do.	18	S.		Franklin No. 2,	do.	Back hurt by fall of coal while mining.
Mar. 26,	John Marco,	do.	31	M.		Webster No. 4,	do.	Slightly hurt while mining.
Apr. 4,	Charles Turner,	do.	43	M.		Glenwood,	do.	Collar bone fractured by a fall of coal while undermining his place.
13,	Frank Washburn,	Driver,	25	M.		Morrisdale,	do.	Hurt while going in the mine with his empty trip of wagons by timber falling on him.
23,	John R. Camphell,	do.	20	S.		Rothrock,	do.	Slightly hart by being caught between the rib and wagon.
May 6,	Terrence McAlarney,	do.	18			Mount Vernon No. 5,	do.	Leg fractured by being struck with the wire line.
9,	John Bushak,	Miner,	35			Rothrock,	do.	Leg hurt below the knee by being caught between two cars.
11,	B. A. Johnson,	do.	19			Grassflat,	do.	Shoulder dislocated by fall of coal.
23,	Thomas Keley,	do.	18			Columbia No. 1,	do.	Leg broke by a fall of coal.
25,	L. M. Peirson,	Machinist,	25			Rothrock,	do.	Had small bone of leg broken by being caught between the digging machine and cars.
June 9,	Robert Rockby,	Miner,	14			Eureka No. 5,	do.	Caught between cars and was severely hurt.
10,	John Yenick,	Dumper,	35	M.		Empire,	do.	Caught between the railroad cars while shifting them.
17,	John Ockerman,	Miner,	35			Eureka No. 5,	do.	Seriously hurt by a fall of coal while mining.
July 14,	Jenkins Jiles,	do.	19	S.		Elizabeth No. 3,	Centre,	Slightly hurt by fall of coal while mining.
Aug. 2,	Vallance Stacick,	do.	23			Sugar Camp No. 1,	do.	Leg broken by a fall of top coal while mining.
16,	Benjamin Williams,	do.	45			Elizabeth No. 3,	do.	Leg and foot bruised by being caught between the car and face of room.
23,	Michael McCarrity,	do.	30			Logan,	Clearfield,	Bruised and cut about the body and head by a fall of coal.
28,	Thomas Holl,	do.	20	S.		Empire,	do.	Bruised about body and back by jumping from the cars while in motion.
Sept. 1,	William Griffiths,	do.		M.		Eureka No. 2,	do.	Foot hurt by fall of coal.
2,	William Johns,	do.				do. do.	do.	Leg broken by a fall of rock from roof.
2,	William Thomas,	do.		S.		do. do.	do.	Foot crushed by the same fall of roof.

TABLE No. 5.—List of non-fatal accidents—*Continued.*

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Oct. 3,	Jacob Kosak, ...	Miner, ...	. . .	S.	. . .	Rothrock, ...	Clearfield, ...	Burned by an explosion of powder.
3,	Joseph Yarko, ...	do.	. . .	M.	. . .	do.	do.	Burned by an explosion of powder.
3,	Mike Yarko, ...	do.	. . .	S.	. . .	do.	do.	Burned by an explosion of powder.
17,	Joseph Hooper, ...	do.	42	M.	. . .	Sterling No. 1, ...	do.	Leg broken by a bank car.
27,	Albert Brandt, ...	do.	30	M.	. . .	Webster No. 4, ...	do.	Hurt by a piece of rock falling on him while mining.
31,	Peter McMire, ...	. . . . .	47	M.	. . .	Sterling No. 1, ...	do.	Slightly injured by being caught between the car and rib.
Nov. 26,	Jonathan Hutchison, . .	. . . . .	27	M.	. . .	Kyler, ...	do.	Three ribs and collar bone broken by a fall of bone coal.
Dec. 16,	David Morgan, ...	. . . . .	45	M.	. . .	Mount Vernon No. 5, .	do.	Leg broken by coal falling on him while shearing after a shot.
14,	Samuel Morgan, ...	. . . . .	63	. . .	. . .	Atlantic No. 1, ...	do.	Collar bone and leg broken by coal falling on him.

TABLE V.—Showing the grand total of employés, horses, mules, engines, pumps, boilers and powder employed, tons of coal mined and shipped, fatal and non-fatal accidents, &c., in the Eighth Bituminous Mine District for the year ending December 31, 1887.

Name of Counties and Parts of Counties in the District.	Total number of men employed (miners).	Total number of boys employed.	Total number of horses and mules employed.	Total number of locomotives employed.	Total number of boilers employed.	Total number of kegs of powder consumed.	Total number of tons of coal produced.	Total number of tons of coal shipped.	Total number of fatal accidents.	Total number of non-fatal accidents.
Centre and Clearfield counties, with exception in Clearfield county, of that part of Clearfield contiguous to Du Bois and the Bell's Gap railroad, ...	5,835	569	688	6	48	11,858	4,829,017	4,678,815	14	33

Grand total of persons employed, 7,780.

Coke produced, 153,941 tons.

FIRST ANTHRACITE DISTRICT.

Office of the Inspector of Mines,
Scranton, Pa, *March 31, 1888.*

Hon. Thomas J. Stewart,
Secretary of Internal Affairs:

Sir: In compliance with article two (2) section seven (7) of an act of Assembly, approved June 30th, A. D. 1885, I have the honor of herewith submitting my annual report as Inspector of Mines for the year ending December 31st, A. D. 1887.

The collieries in this district are in good condition. By reference to the accompanying tabular report it shows that the production of coal during the year was 8,527,768.05 tons, an increase of 1,415,572.09 tons over the production of 1886. There was an increase in production and a decrease in the number of deaths and accidents.

The following is a summary of the most important statistics:

	Tons.
Amount of coal mined in 1887,	8,527,768.05
Amount of coal mined in 1886,	7,112,295.16
Increase of coal mined in 1887,	1,415,572.09
Amount of coal shipped in 1887,	8,007,908.04
Amount of coal shipped in 1886,	6,731,227.00
Increase in shipments in 1887,	1,276,681.04
Amount of coal sold at mines in 1887,	240,482.01
Amount of coal used at mines for steam, etc., etc.,	279,378.00

There were 274,305 kegs of powder used to mine 8,527,768.05 tons of coal, which would give 31 tons mined for each keg

There were 57 fatal accidents in 1887.

There was one death for every 149,160 tons of coal mined.

There were 60 fatal accidents in 1886.

There was one death for every 118,538 tons of coal mined.

There were 225 non-fatal accidents.

There was 37,901 tons of coal mined for each non fatal accident.

There were 32 wives made widows.

Total number of employés,	21,269
Tons of coal mined for each employé,	401
Total number of persons working in mines,	14,729
Tons of coal mined for each,	579
Total number of miners and laborers,	10,199
Number of tons of coal mined for each,	836
Ratio of employés per life lost,	373
Ratio of employés for each personal injury,	95

Respectfully submitted.

PATRICK BLEWITT,
Inspector of Mines.

Colliery Improvements During 1887.

Delaware, Lackawanna and Western Railroad Company.—This company reports but very few improvements during the year, except driving headings and airways to open up their different mines, so as to mine sufficient coal to supply the market.

Cayuga Shaft.—The company is sinking a new shaft about one mile north-east of the main shaft for a supply shaft and for the purpose of lowering and hoisting persons into and out of the mines.

Sloan Shaft.—Sunk a new slope in coal in mine; and are also building a new plane in mine.

Storr's Shaft.—Are sinking a new shaft for second opening and supply shaft.

Delaware and Hudson Canal Company have not reported any improvements during the year 1887, except the usual advancement of their workings to supply the coal demand and sinking the two shafts at Dixon mines from G or Big to Clark vein of coal.

A. Langdon & Co.—Belmount Colliery put in place three new boilers, erected a double elevator and built two new pockets in breaker.

Bridge Coal Company—Bridge Shaft Mines.—This company made second opening in new County vein, and are now finishing new foot for same.

Lackawanna Iron and Coal Company—Capouse Shaft Mines.—This company is driving a tunnel from rock to Diamond vein; size, 14x6 feet.

Dolph Coal Company—Dolph Mine.—This company is driving a rock tunnel.

Hillside Coal and Iron Company—Forest City Mines.—The shaft reported as being sunk 160 feet to bottom vein in last year's report (1886), has reached a depth of 199 feet. Suspension of work for some months accounts for it not being finished. Work is now going rapidly forward to completion.

Jessup Coal Company—Filer's Slope.—This company is sinking a new slope in coal; it is now down 900 feet. Sectional area, 96 feet.

Hillside Coal and Iron Company—Glenwood Shafts.—The work on the two shafts and breaker, reported in last year's report, 1886, under the head of Erie colliery improvements, has been advanced as follows: The shaft to top vein has been completed at a depth of 100 feet. The shaft to bottom vein has reached a depth of 160 feet. Work is being pushed rapidly forward in this shaft. The breaker to prepare the out-put of these two shafts for market is about finished, and is expected to prepare coal from the top vein about February 1, 1888. This Company is also sinking the Clifford shaft, at Forest City, as rapidly as possible.

John Jermyn—Jermyn No. 4 Shaft has built a new reservoir for spring water to supply the boilers. Started sinking a new slope November 5, 1887, and are down 170 feet. Slope opening, 14′x7′; pitch, 1 foot in 3 feet. Has set three new boilers in place; one pair of engines, 10″x10″; one fan engine, 12″x12″, and one pumping engine.

Wm. T. Smith—Mount Pleasant Slope.—Sinking a new shaft to Clark vein. Size of shaft opening is 30′x11′. Depth of shaft from surface to bottom of little vein, 27 feet; Diamond vein, 139 feet; Rock vein, 171 feet; G or Big vein, 241 feet; new County vein, 292 feet; and to Clark vein, 365½ feet.

Moosic Mountain Coal Company—Marshwood Colliery have everything ready to ship coal when branch track to breaker is finished. Are now pushing the work rapidly forward.

William H. Richmonds—Richmond Shaft.—Finished sinking shaft reported in 1886, and are now mining coal in No. 2 vein.

Winton Coal Company—S. V. White Mine has sunk a new shaft and built a new furnace.

Pennsylvania Coal Company—Shaft No. 1 Dunmore.—The second opening of this shaft is not yet completed.

William Connell & Co.—Stafford Shaft has been put in good working order. A new hoisting tower and new engine and boiler houses have been erected. A new nine foot diameter fan has been put in place, and a new railroad track has been laid connecting this shaft with the National breaker, where the coal is prepared for market.

Watkin's Son & Co.—Watkin's Colliery.—This company has erected a new breaker, having a capacity to prepare 500 tons of coal per day of ten hours. Have also erected a boiler house, blacksmith shop, barn and office, etc. Also sunk slope, opened a tunnel, sunk air shaft, and built air stack and furnace for ventilating purposes.

TABLE 1.—Showing location of collieries in the First Anthracite Mine District for the year ending December 31, 1887.

NAME OF COLLIERY.	Name of Operator.	Location—County.	Name of Superintendent.	Postoffice Address.
Archibald Shaft,	Delaware, Lackawanna and Western R. R. Co.,	Lackawanna,		Scranton, Pa.
Bellevue Shaft,	do. do. do.	do.		do.
Bellevue Slope,	do. do. do.	do.		do.
Brisbin Shaft,	do. do. do.	do.	Wm. R. Storrs, General Coal Agent	do.
Continental Shaft,	do. do. do.	do.		do.
Central Shaft,	do. do. do.	do.	Wm. H. Storrs, Assistant General Coal Agent,	do.
Cayuga Shaft,	do. do. do.	do.		do.
Dodge Shaft,	do. do. do.	do.		do.
Diamond No. 2 Shaft,	do. do. do.	do.	Benj. Hughes, General Mine Superintendent,	do.
Holden Shaft,	do. do. do.	do.		do.
Hampton Shaft,	do. do. do.	do.		do.
Hyde Park Shaft,	do. do. do.	do.	Thos. D. Davis, Assistant General Mine Superintendent,	do.
Manville Shaft,	do. do. do.	do.		do.
Oxford Shaft,	do. do. do.	do.		do.
Pyne Shaft,	do. do. do.	do.	Townsend Poor, General Master Machinist,	do.
Sloan Shaft,	do. do. do.	do.		do.
Storrs Shaft,	do. do. do.	do.		do.
Taylor Shaft,	do. do. do.	do.		do.
Taylor Drift,	do. do. do.	do.		do.
Tripp Shaft,	do. do. do.	do.		do.
Coal Brook Tunnel,	Delaware and Hudson Canal Company,	do.		do.
Dickson Shaft,	do. do. do.	do.	A. H. Vandling, General Superintendent Coal Department,	do.
Eddy Creek Shaft,	do. do. do.	do.		do.
Grassy Island Shaft,	do. do. do.	do.	J. M. Chittenden, General Outside Assistant,	do.
Jermyn No. 1 Shaft,	do. do. do.	do.		do.
Leggitt's Creek Shaft,	do. do. do.	do.		do.
Marvine Shaft,	do. do. do.	do.	Andrew Nicol, General Mine Superintendent,	do.
Midland Tunnel,	do. do. do.	do.		do.
Number 1 Shaft,	do. do. do.	do.		do.
Number 3 Shaft,	do. do. do.	do.	A. B. Nicol, Assistant General Mine Superintendent,	do.
Olyphant No. 2 Shaft,	do. do. do.	do.		do.
Powderly Slope,	do. do. do.	do.		do.
Von Storch Slope and Shaft,	do. do. do.	do.	Alexander Simpson, General Master Mechanic,	do.
White Oak Slope and Tunnel,	do. do. do.	do.		do.
White Bridge Tunnel,	do. do. do.	do.		do.
Rackett Brook Breaker,	do. do. do.	do.		do.
Shaft No. 1,	Pennsylvania Coal Company,	do.	John B. Smith, General Supt.; George Smith, Assistant Supt.; Jas. Young, Mine Supt.,	Dunmore, Lackawanna county, Pa.
Shaft No. 2,	do. do.	do.		do. do. do.
Shaft No. 3, Gypsy Grove,	do. do.	do.		do. do. do.
Shaft No. 4, Gypsy Grove,	do. do.	do.		do. do. do.
Shaft No. 5,	do. do.	do.		do. do. do.
Bridge Shaft,	Bridge Coal Company, Limited,	do.	A. B. Stevens,	Scranton, Pa.
Belmont Tunnel,	Andrew Langdon,	do.	W. T. Leas,	Carbondale, Pa.
Brennan's Tunnel,	Frisbie & Co.,	do.		do.
Capouse Shaft,	Lackawanna Iron and Coal Company,	do.	Reese G. Brooks,	Scranton, Pa.

Pine Brook Shaft,	do.	do.	do.	do.	do.
Church Tunnel,	Church Coal Company, Limited,	do.	do.	James Flynn,	do.
Clarke Tunnel,	Clark Tunnel Coal Company,	do.	do.	Edward J. Dolph,	do.
Dolph Tunnel,	Dolph Coal Company, Limited,	do.	do.	Edward Jones,	Archbald, Lackawanna county, Pa.
Eaton Shaft and Tunnel,	Jones Simpson & Co.,	do.	do.	do.	do.
Pierce Tunnel,	do. do.	do.	do.	J. L. Crawford,	Jermyn, Lackawanna county, Pa.
Edgerton Tunnel,	Edgerton Coal Company, Limited,	do.	do.	do.	do.
Grassy Island Shaft and Tunnel,	Grassy Island Coal Company, Limited,	do.	do.	do.	do.
Simpson Slope and Tunnels,	Northwestern Coal Company, Limited,	do.	do.	W. A. May,	Scranton, Pa.
Erie Shaft,	Hillside Coal and Iron Company,	do.	do.	do.	do.
Glenwood Slope,	do. do.	do.	do.	do.	do.
Keystone Tunnel,	do. do.	do.	Susquehanna,	do.	do.
Forest City Shafts and Slope,	do. do.	do.	do.	do.	do.
Clifford Shaft,	do.	do.	do.	John H. Hosle,	do.
Fair Lawn Slope,	Fair Lawn Coal Company, Limited,	do.	Lackawanna,	S. N. Stetler,	do.
Filer's Slope,	Jessup Coal Company,	do.	do.	O. S. Johnson,	do.
Green Ridge Slope,	O. S. Johnson,	do.	do.	do.	do.
Lackawanna Coal Company Shaft,	Lackawanna Coal Company,	do.	do.	Walter M. Jermyn,	do.
Jermyn No. 4 Shaft,	John Jermyn,	do.	do.	William Connell,	do.
Meadow Brook Shaft,	William Connell & Co.,	do.	do.	do.	do.
Meadow Brook Tunnel,	do. do.	do.	do.	do.	do.
National Shaft and Slope,	do. do.	do.	do.	do.	do.
Stafford Shaft,	do. do.	do.	do.	William T. Smith,	do.
Mount Pleasant Slope,	William T. Smith,	do.	do.	John R. Davis,	do.
Marchwood Slope and Tunnel,	Moosic Mountain Coal Company,	do.	do.	George Griffin,	Throop, Lackawanna county, Pa.
Pancoast Shaft,	Pancoast Coal Company,	do.	do.	Wm. H. Richmond,	Dickson City, Lackawanna co., Pa.
Richmond Shaft,	Elk Hill Coal and Iron Company,	do.	do.	A. D. Spencer,	Dunmore, Lackawanna county, Pa.
Spencer's Shaft,	A. D. & L. M. Spencer,	do.	do.	Byron M. Winton,	Peckville, Lackawanna county, Pa.
S. V. White Tunnel,	Winton Coal Company,	do.	do.	W. W. Watkins,	Carbondale, Lackawanna co., Pa.
Watkin's Slope and Tunnel,	Watkin's Son & Co.,	do.	do.		

TABLE No. 2.—Gives the total number of tons of coal mined and tons of coal shipped from each colliery, number of days worked, number of employés, number of persons killed and injured, number of kegs of powder used, etc., in the First Anthracite Mining District, for the year ending December 31, 1887.

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Number of tons of coal used at each colliery for steam heating and furnace.	Number of tons of coal sold for local consumption.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs of powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.
Archbald Shaft,	Lackawanna twp., Lacka. co.,	172,808 01	5,200	888.00	166 720 01	201 1/10	401	. .	6	6 463	14	55	. . .
Bellevue Shaft,	do. do. do.	199 229.01	10,950	4,076.00	184,203.01	200 5/10	387	.	2	3 531	24	63	. . .
Bellevue Slope,	do. do. do.						100	. .	3	1.991			
Brisbin Shaft,	3d ward, Scranton, Lacka. co.,	57,251.17	10,100	567.00	46,584.17	77	363	. .	1	1,956	15	40	. .
Continental Shaft,	Lackawanna twp., Lacka. co.,	30 235 18	3 810	360.00	26 065 18	39 8/10	369			603	15	54	. .
Central Shaft,	15th ward, Scranton, Lacka. co.,	287.742.01	19,000	5,110.00	263 632.01	215 7/10	491	. .	3	5.938	27	73	1
Cayuga Shaft,	3d ward, Scranton, Lacka. co.,	172 917.17	8.500	3,193.00	161,224.17	204 9/10	418	2	8	4.445	12	60	. .
Dodge Shaft,	Lackawanna twp., Lacka. co.,	154,056.15	3,650	1,476.00	148 930.15	195	323	3	8	4.788	21	69	1
Diamond No. 2 Shaft,	21st ward, Scranton, Lacka. co.,	241,899.03	18,100	2,782.10	221,016.13	195 7/10	166		5	1,592	26	12	2
Tripp Shaft,	do. do. do.					206 2/10	416	1	4	5,911	29	48	. .
Holden Shaft,	Lackawanna twp., Lacka co.,	150,740 15	3,650	720.00	146,370.15	214 1/10	246	1	8	5,700	12	33	. .
Hampton Shaft,	do. do. do.	181,835.13	5.250	1 940.00	174,645.13	211 9/10	428	2	4	4 960	13	59	. . .
Hyde Park Shaft,	5th ward, Scranton, Lacka. co.,	116,699.11	3,500	1.129.00	112.070.11	193 9/10	312	.	2	3,751	12	45	. . .
Manville Shaft	13th ward, Scranton, Lacka. co.,	116 524.15	1,040	5,021.00	110.463 15	122 3/4	210		6	3,059	9	26	. .
Oxford Shaft,	5th ward, Scranton, Lacka. co.,	124 182 03	150	1 892.00	122,140.03	171 3/4	378	1	9	4 052	19	39	. . .
Pyne Shaft,	Lackawanna twp., Lacka. co.,	206.476 10	7,300	1,831.00	197 345.10	203 2/10	405	.	5	5,523	12	64	1
Sloan Shaft,	do. do. do.	207,949.10		173.00	207 776.10	213 7/10	474	.	7	5,964	18	67	.
Storr's Shaft,	1st ward, Scranton, Lacka. co.,	3,000.00	3 000				35	.	. . .	.	6	5	. .
Taylor Shaft and Drift,	Lackawanna twp., Lacka. co.,	190,118.15	4,200	2 678.00	183,240.15	210 8/10	455	3	9	5,902.	16	83	. .
Miscellaneous employees, etc.,	. . . . .						227		. . .				
Totals D., L. & W. R. R. Co.,	. . . . .	2 613,668.05	107,400	33 836 10	2 472,431.15	. .	6,604	13	90	76,039	300	900	5
Coal Brook and Midland Tun'ls,	Carbondale City, Lacka. co.,	283 010.00	3 130	251 15	279 628.05	243 1/4	619	2	5	9,227	7	97	1
Dixon Shaft.	2d ward, Scranton, Lacka. co.,	213,169.09	9 390	1 508.08	202 271 01	227	395	7	5	5,505	15	41	. . .
Eddy Creek Shaft,	Olyphant borough, Lacka. co.,	185.944.07	9 390	2 048.19	174 505 08	247 3/4	471	2	3	6,300	12	54	
Grassy Island Shaft,	do. do. do	45,627.08	9,703	337 09	35 586.19	82 1/2	351	. . .	3	1,224	18	38	1
Jermyn No. 1 Shaft,	Jermyn borough, Lacka. co.,	217 810.17	14,085	6,338.11	197,387 06	248 3/4	438	.	1	5,000	15	47	. . .
Leggitt's Creek Shaft,	1st ward, Scranton, Lacka. co ,	193 041 08	12,520	1 416.15	179,104 13	238 1/2	448	2	4	5,180	15	51	. . .
Manville Shaft,	13th ward, Scranton, Lacka. co.,	114 649 07	5,479	2,538.18	106,631.09	121 1/4	211	. . .	5	3,059	9	25	. .
Marvine Shaft,	1st ward, Scranton, Lacka. co.,	202,074.15	12 520		189.554.15	242 1/2	398	1	7	5,750	15	46	. .
No. 1 Shaft Carbondale,	Carbondale City, Lacka. co.,	54,888.16	3,130	. . . . .	51,758 16	222 2/3	251	. . .	. . .	4,000	5	31	. .

No. 3 Shaft Carbondale,	Carbondale City, Lacka. co.,	8,807.13	4 695	. . . .	4,112.13	223	154	. .	1	1 716	6	11	. . .
Olyphant No. 2 Shaft,	Olyphant borough, Lacka. co.,	115 253.10	7,512	. . .	107 741.10	218¾	294	. . .	5	3 665	12	31	. . .
Powderly Slope.	Carbondale City, Lacka. co ,	91 586.10	5.321	. . . .	86.265.10	233½	244	. .		4,100	9	27	. . .
Rackett Brook Breaker,	Carbondale twp., Lacka. co ,	206 915 10	2,191		204.724 10	258⅝	75		2		5	5	. . .
Von Storch Shaft and Slope,	2d ward, Scranton, Lacka. co.,	268 181.13	18 780	3,336.12	246.065.01	232¾	599	2	7	7,225	29	82	. . .
White Oak Slope and Tunnel,	Archbald borough, Lacka. co ,	129,365 07	4,382	1 813 09	123.169.18	248	308	. .	1	3,800	13	41	. . .
Miscellaneous employees,	. . . . .	. .		.	. .		74	. .	. .	. . . .	. .	. . . .	. .
Totals Del. & Hud. Canal Co.,	. . . . .	2,330,326 10	122,228	19 590.16	2,188,567.14		5,289	16	52	65,751	185	627	2
Shaft No. 1 Penn. Coal Co.,	Dunmore borough, Lacka co.,	1,055.00	1,055	. . . .		290	30	1	. .	575	6	1	. .
Shaft No. 2 Penn. Coal Co.,	do. do. do.	58 980 00	391	. .	58 589.00	284¾	95	. .	. . .	2,709	3	7	1
Shaft No. 3 Penn. Coal Co.,	do. do. do.	65 586 00	2 202	3,179 00	60,205.00	261½	186	. .	.	} 6,263	{ 7	17	. . .
Shaft No. 4 Penn. Coal Co.,	do. do. do.	70,444.00	344		70.100 00	261½	137	. .	1		{ 3	21	.
Shaft No. 5 Penn. Coal Co.,	do. do. do.	114 280 00	2,192	13,547.00	98 541.00	286¼	303	. .	. .	5,868	5	23	.
Totals Penn Coal Co.,	. . . . .	310,345.00	6,184	16,726.00	287,435.00	. .	751	1	1	15,415	24	69	1
Bridge Shaft,	14th ward, Scranton, Lacka. co,,	107,291.06		27,740 10	79 550.16	271 $\frac{3}{10}$	248	. .	6	4,472	12	49	. .
Belmont Tunnels,	Carbondale City. Lacka. co.,	29 688.15	528	818 00	28 342 15	98	155	.	. . .	1,091	3	15	. . .
Brennan's Tunnels,	Fell township, Lackawanna co.,	20 856.13			20.853 13	100	106		. .	1,000	3	10	. . .
Capouse Shaft,	21st ward, Scranton, Lacka. co.,	327.791.00	7,000	1 960.00	318,831.00	203	584	4	7	8,471	15	78	. . .
Pine Brook Shaft,	7th ward, Scranton, Lacka co.,	145,904.00	4 224	2 819 00	138 861.00	172 $\frac{9}{10}$	516		6	4.289	3	49	. .
Church Slope and Tunnel,	2d ward, Scranton, Lacka. co.,	16,500.00	500	10 000 00	. 6,000 00	229	33	. .	. . .	600	2	6	. .
Clark Tunnel,	3d ward, Scranton. Lacka. co.,	5 965.10	.	5,965 10	.	170	14	.		184	2	. 6	.
Dolph Tunnel,	Winton borough. Lacka. co.,	68 433.62	.	499.00	67,934.02	201¾	229	. . .	1	1,928	4	22	.
Eaton Shaft and Tunnel,	Archbald borough, Lacka. co.,	127,105.00	480	.	126 625.00	237 $\frac{7}{10}$	370	. .	3	4,763	11	27	2
Pierce Slope and Slope,	do. do. do.	151 657.00	2,508	303.00	148 845.00	209¼	333	1	6	4,300	13	24	3
Edgerton Tunnel,	do. do. do.	160.547.00	.	405 10	160.141 11	228 $\frac{7}{10}$	279	. .	1	5 545	4	31	1
Grassy Island Shaft and Tunnel,	Winton borough, Lacka. co ,	70 048.14	320	1,867.15	67,860.19	158½	327	1	6	2,805	15	27	1
Simpson Slope and Tunnels,	Fell township, Lacka. co.,	105,781.18	. . . .	694 10	105,087 08	259	218	. .	3	4 350	9	27	2
Erie Shaft,	Glenwood borough, Lacka. co.,	123 388.16	.	1,572.08	121,816.08	196¾	436	1	. . .	3,744	21	51	. .
Glenwood,	do. do. do.	Shafts sink	ing and	building	breaker.	. . . . .	122			. . . . .	. . .	. . . .	
Forest City Shafts and Slope,	Clifford twp., Susquehanna co.,	176 421.10	1,076	2,260.19	173 084.11	266½	353	1	3	7,270	11	35	2
Clifford Shaft,	do. do. do.	Sinking.	. . . .	.	. .	. .	27	. . .	.	. . . . .	.	. . . .	. . .
Keystone Tunnel,	Glenwood borough, Lacka. co.,	145.867.01	. . .	291.00	145,576.01	254	308	.	2	4,418	2	33	. .
Fair Lawn Slope,	7th ward, Scranton Lacka. co.,	67,846.10	1,200	9,455.13	47.190.17	206½	179	1	3	2,687	5	18	. . .
Filer's Slope,	Winton borough. Lacka. co.,	43 995.16	9,500	402.00	24,093.16	133 $\frac{8}{10}$	230	2	3	2,035	13	23	. .
Green Ridge Slope,	Dunmore borough, Lacka. co ,	141 357 06	. . . .	5,171 00	136.186 06	250¼	390	1	4	6,499	12	44	. . .
Lackawanna Shaft,	Blakely borough, Lacka. co.,	173,212.09	. . .	2 507.03	170,705.06	229 $\frac{8}{10}$	391		2	6,024	12	45	.
Jermyn No. 4 Shaft,	Dickson City borough, Lacka. co.,	173,303.11	. .	1,735 06	171,568.05	221	516	2	6	6,202	18	60	. .
Marshwood Slope and Tunnel,	do do. do.	220 00	200	20 00		. . . . .	.	1	. . .	. . . .	8	. .	
Meadow Brook Shaft,	20th ward, Scranton, Lacka. co.,	182,254.08	. .	49,607.00	132 647.08	218 $\frac{7}{10}$	337	. . .	. . .	7,187	17	44	.
Meadow Brook Tunnel.	do. do. do.	} 167,504.12	. . . .	. . . .	167,504 12	{ 195 $\frac{75}{100}$	80	1	1	} 6,511	{ 1	16	1
National Shaft and Slope,	do. do. do.					{ 195 $\frac{75}{100}$	247	1	. . .		{ 10	26	. . .
Stafford Shaft,	Lackawanna twp., Lacka. co.,					{ 88 $\frac{5}{10}$	47				{ 3	4	1
Mount Pleasant Slope,	14th ward. Scranton, Lacka. co ,	146,016 17		8.985.13	137.031.04	197	357	2	4	4 500	10	34	.
Pancoast Shaft,	Dickson City borough, Lack co ,	178,436.09	9,530	4 638 18	164,267.11	222	453	4	6	6,907	16	55	. . .
Richmond Shaft,	21st ward, Scranton, Lacka. co.,	19,419 00	500	450.00	18,469.00	135	87	1	4	900	4	11	. . .
Spencer's Shaft,	Dunmore borough. Lacka. co.,	117,509.10	8.650	3,422 00	110,437.10	181 $\frac{35}{100}$	291	3	1	4,905	11	22	.
S. V. White Tunnel,	Winton borough, Lacka. co.,	60.609 01	1,800	111 00	58,698.01	202 $\frac{9}{10}$	213	. .	4	3,019	3	19	1
Watkins Slope and Tunnel,	Carbondale City, Lacka co.,	472.01	100	153.00	219.01	8	74	. . .	. .	17	3	10	. . .

TABLE No. 2—Continued.

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Number of tons of coal used at each colliery for steam heating and furnace.	Number of tons of coal sold for local consumption.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs of powder used.	Number steam boilers.	Number horses and mules	Number mine locomotives.
Peckville Tunnel,	Winton borough, Lacka. co.,	1,801.14	450	550.00	801.14	6	Now 12	idle.				6	
Tripp & Company,	21st ward, Scranton, Lacka. co.,	10,642.00		10,323.00	319.00	140	40					6	
Eight Local Coal Sale Mines,	Lackawanna county,	15,600.00		15,600.00									
Total miscellaneous coal cos.,		3,273,423.10	43,566	170,323.15	3,059,533 15		8,602	27	82	117,100	283	935	14
Grand totals,		8,527,786.05	279,378	240,482.01	8,007,908 04		21,246	57	225	274,305	792	2,531	22

TABLE No. 3—Showing the number of each class of employés at each colliery in the First Anthracite Mine District during the year 1887.

Names of Collieries.	Number of Persons Employed Inside.							Number of Persons Employed Outside.						Grand totals—Inside and outside.
	Inside foreman or mine boss.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Doorboys and helpers.	Total inside.	Outside foreman.	Mechanics.	Slate pickers.	All company men.	Superintendent, bookkeepers and clerks.	Total outside.	
Archbald shaft,	1	108	96	22	37	7	271	1	9	66	52	1	129	400
Bellevue shaft,	1	77	79	16	27	9	209	1	12	108	55	1	177	386
Bellevue slope,	1	33	33	12	18	3	100	...	..	....	..	....	....	100
Brisbin shaft,	1	75	103	29	27	7	242	1	7	68	43	1	120	362
Continental shaft,	1	83	86	30	50	8	258	1	8	56	44	1	110	368
Central shaft,	2	119	123	35	54	16	349	1	11	70	58	2	142	491
Cayuga shaft,	1	82	82	54	39	6	264	1	10	90	51	1	153	417
Dodge shaft,	2	87	87	22	35	3	236	1	9	40	35	1	86	322
Diamond, No. 2, shaft,	1	23	23	12	7	1	67	..	6	39	53	1	99	166
Holden shaft,	1	70	50	19	20	5	165	1	3	45	31	1	81	246
Hampton shaft,	1	95	90	32	48	11	277	1	8	70	72	1	152	429
Hyde Park shaft,	1	70	74	21	32	11	209	1	4	60	37	1	103	312
Manville shaft,	1	50	50	14	36	5	156	..	5	24	25	....	54	210
Oxford shaft,	1	90	94	20	38	9	252	1	10	69	45	1	126	378
Pyne shaft,	2	104	109	30	37	13	295	1	9	52	47	1	110	405
Sloan shaft,	2	113	113	25	47	11	311	1	7	96	58	1	163	474
Storrs' (sinking shaft),	1	...	23	...	....	.	24	...	3	..	8	...	11	35
Taylor drift and shaft,	2	102	106	39	56	12	317	1	4	75	57	1	138	455
Tripp shaft,	2	108	108	31	38	8	295	1	3	60	56	....	120	415
Miscellaneous,	....	....	...	...		...	.....	...	..	..	...	..	227	227
Total employees of Del., Lack. & Western R. R. Co,	25	1,489	1,529	463	646	145	4,297	15	128	1,088	827	16	2 301	6,598
Coal Brook and Midland tunnels,	2	279	65	70	62	..	478	1	8	61	70	1	141	619
Dixon shaft, Big and Clark veins,	1	88	88	45	56	9	287	1	11	52	43	1	108	395
Eddy Creek shaft,	1	138	122	47	39	6	353	1	7	55	54	1	118	471
Grassey Island shaft,	1	152	26	21	43	11	254	1	6	45	44	1	97	351
Jermyn, No. 1, shaft,	1	234	20	22	54	6	337	1	9	41	49	1	101	438
Leggett's Creek shaft, Diamond and Big veins,	2	102	102	43	76	10	335	1	14	52	45	1	113	448

TABLE No. 3—Continued.

NAMES OF COLLIERIES.	NUMBER OF PERSONS EMPLOYED INSIDE.							NUMBER OF PERSONS EMPLOYED OUTSIDE.						Grand totals—inside and outside.
	Inside foreman or mine boss.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Doorboys and helpers.	Total inside.	Outside foreman.	Mechanics.	Slate pickers.	All company men.	Superintendent, bookkeepers and clerks.	Total outside.	
Manville shaft,	...	50	50	15	35	5	155	1	5	23	26	1	56	211
Marvine shaft,	1	97	93	32	50	14	287	1	6	50	53	1	111	398
No. 1 shaft, Carbondale,	1	135	14	27	34	4	215	1	2	5	28	....	36	251
No. 3 shaft, Carbondale,	1	55	22	35	17	5	135	1	1	1	16	...	19	154
Oliphant, No. 2, shaft,	1	136	28	18	41	3	227	1	5	30	30	1	67	294
Powderly slope,	1	130	30	21	28	8	218	1	2	7	16	....	26	244
Rackett Brook breaker,	.	.	.	. .	. . .	. . .	. . .	1	1	44	28	1	75	75
Van Storch slope, Diamond and Big vein,	1	61	61	34	53	6	455	1	11	56	75	1	144	599
Van Storch shaft, Clark vein,	1	74	74	30	50	5								
White Oak slope and tunnel,	1	100	50	16	36	7	210	1	6	45	45	1	98	308
Miscellaneous,	..	..	.	. . .	. . .	. . .	. .	. . . .	. . . .	. . . .	. . . .	. . . .	74	74
Total employees of Delaware & Hudson Canal Co,,	16	1 831	845	476	679	99	3,946	15	94	567	622	12	1,384	5 3.0
Bridge shaft,	1	43	46	13	25	12	140	1	5	60	42	2	110	250
Belmont tunnel,	1	50	15	7	19	6	98	1	4	25	27	2	59	157
Capouse shaft,	2	143	140	59	70	14	428	1	12	70	73	2	158	586
Dolph tunnel,	1	56	57	6	33	6	153	1	3	49	23	2	78	231
Eaton shaft and tunnel,	1	128	78	9	32	9	257	2	3	59	49	2	115	372
Edgerton tuunel,	1	85	75	8	25	8	202	1	6	40	28	2	77	279
Erie shaft,	1	210	10	55	48	6	330	1	8	60	37	2	108	438
Forest City shaft and slope,	2	125	53	26	42	10	258	1	9	30	55	2	97	355
Filer's slope,	2	49	47	17	22	6	143	1	5	45	33	2	86	229
Fair Lawn slope,	1	35	42	10	20	7	115	1	4	40	19	2	66	181
Grassey Island shaft,	2	95	70	29	26	6	228		4	49	43	1	99	327
Grassey Island tunnel,														
Glenwood shaft (sinking ; also building breaker),	.	25	. .	. .	. .	.	25	....	....	....	97	....	97	122
Green Ridge shaft,	1	95	95	25	55	15	286	1	5	60	36	2	104	390
Jermyn, No. 4, shaft,	1	125	125	45	85	18	399	1	5	60	51	2	119	518

Lackawanna shaft,		1	100	100	25	55	8	289	1	5	60	34	3	103	372
Meadow Brook shaft,		1	110	45	15	42	15	228	1	9	65	34	2	112	340
Meadow Brook tunnel,		1	40	12	5	11	6	75		1		4		5	80
Mount Pleasant slope,		1	71	71	22	45	10	220	1	5	76	55	2	139	359
Keystone tunnel,		1	160	8	24	42	6	241	1	4	35	27		67	308
National shaft and slope,		1	70	20	12	30	10	143	1	7	65	31		104	247
Pine Brook shaft,		1	86	181	41	73	14	346	1	6	77	86	2	172	518
Pierce slope and tunnel,		1	120	60	20	20	6	227	1	8	48	49	2	108	335
Pancoast shaft,		2	120	120	32	55	13	342	1	9	55	45	2	113	455
Richmond shaft,		1	20	12	9	9		51	1	3	21	9	2	36	87
Shaft No. 1, Dunmore,		1	5	8	9	1		24				6		6	30
Shaft No. 2, Dunmore,		1	29	30	7	9	3	79	1	1		14		16	95
Shaft No. 3, } Gypsey Grove,		1	46	41	7	15	9	119	1	3	34	29	1	63	187
Shaft No. 4, }			48	53	4	18	7	130				7		7	137
Shaft No. 5, Dunmore		1	78	75	20	23	13	210	1	1	52	30	2	95	305
Stafford shaft,		1	19	10	5	3	1	39	1	2		6	1	10	49
Spencer's shaft,		2	65	65	12	32	10	186	2	3	51	49	2	107	293
S. V. White tunnel,		1	46	51	13	33	6	150	1	4	39	19	2	65	215
Simpson slope and tunnel,		1	65	66	7	16	4	149	1	7	29	30	2	63	218
Watkins slope and tunnel,		1	18	18	2	7	3	49	1	1	16	7	2	27	76
Brennan's tunnel,		1	34	10	5	15	3	68	1	2	20	14	1	38	106
Clifford shaft (sinking),			25					25				2		2	27
Church tunnel,		1	10	4	5	3	1	24		4		5		9	33
Clark tunnel,		1	4	5				10				4		4	14
Total miscellaneous coal companies,		41	2,653	1,852	610	1,059	271	6,486	34	154	1,394	1 219	54	2,855	9,341
Grand totals,		82	5,973	4,226	1,549	2,383	515	14,729	64	376	3,049	2,663	82	6,540	21,269

TABLE 4.—List of fatal accidents occurring in and about the mines of the First Anthracite Mine District, for the year ended December 31, 1887.

Date of accident.	NAME OF PERSON.	Age.	Married or single.	No. of children.	Name of Colliery.	Location.	Nature and Cause of Accident in Brief.
Jan. 18,	Thomas Lamb, . . .	40	0	0	Pancoast, P. C. Co., ...	Dickson City borough, Lackawanna county, ...	Seriously injured; explosion of powder while handling it; died on 23d.
22,	Thomas Dawson, . .	26	1	3	Taylor, D. L. & W. R. R. Co., ...	Lacka. twp., Lacka. co., . . .	Killed; fall of coal.
22,	Patrick O'Brien, . .	50	1	7	Spencer, Spencer Bro., ...	Dunmore borough, Lacka co., . .	Killed; fall of roof.
25,	Patrick Riley, . . .	15	0	0	Capouse, L. I. & C. Co., ...	21st ward Scranton, Lacka. co.	Leg cut off by cars running over him; died on 26th.
28,	William Gannon, . .	24	0	0	Dickson, D. & H. C. Co., ...	2d ward, Scranton, Lacka co., .	Seriously injured; fall of roof; died Feb. 15th.
Feb. 5,	Andro Coolaskic, . .	22	0	0	Dickson, D. & H. C. Co., ...	do. do. do.	Killed; fall of coal
18,	Patrick Haggerty, .	57	1	10	Dickson, D. & H. C. Co., ...	do do. do.	Seriously injured; fall of roof; died on 20th.
19,	Michael Shineum, . .	31	0	0	Marshwood, M. M. C. Co., ...	Dickson City borough, Lackawanna county, . . .	Killed; plea fell on his head out of descending bucket.
Mar. 21,	John Cavanagh, . .	40	1	5	Mount Pleasant, Wm. T. S., ...	14th ward, Scranton, Lacka. co.,	Killed instantly; fall of coal.
21,	John Harlow, ...	16	0	0	Forest City, H. C. & I. Co., ...	Clifford twp. Susq. co., ...	Killed; clothes caught in breaker machinery while oiling
30,	Thomas Lewis, . . .	27	1	2	Von Storch, D. & H. C. Co., ...	2d ward, Scranton, Lacka. co.,	An explosion of fire damp occurred in Von Storch and Dickson Mines, Clark Vein, this morning, killing Thomas Lewis and Edward Owens.
30,	Edward Owens, . . .	47	1	10	Von Storch, D. & H. C. Co., ...	do. do. do.	
31,	Evan Evans, . . .	18	0	0	Cayuga, D., L. & W. R. R. Co., ...	3d ward, Scranton, Lacka. co.,	Killed; caught between car and pillar.
Apr. 2,	James O. Boyle, . .	42	1	4	Eddy Creek, D. & H. C. Co., ...	Olyphant borough, Lacka co., .	Killed; fall of bony coal.
11,	Benjamin Jenkens, .	40	1	2	Shaft No. 1, Penna. C. Co., ...	Dunmore borough, Lacka. co.,	Killed; fell down shaft, a distance of 106 feet.
13,	Wm. C. Evans,	35	0	0	Capouse, L. I. & C. Co., ...	21st ward, Scrantou, Lacka. co.,	Killed; fall of rock.
14,	Thomas J. Morris, .	57	1	5	Capouse, L. I. & C. Co., ...	do. do. do.	Killed; fall of rock.
25,	Mathew O'Boyle, . .	27	1	2	Tripp Shaft, D. L. & W. R. R. Co., . . .	do. do. do.	Seriously injured; premature blast; died soon after.
May 11,	Patrick McDonnell,	14	0	0	Leggitt's Creek, D. & H. C. Co., . . .	1st ward, Scranton, Lacka co.,	Killed; caught by runaway culm car on plane.
19,	Frank Krofe, . . .	50	1	1	Richmond, E. H. C. & I. Co.	21st ward, Scranton Lacka co.,	Killed; fell down shaft, a distance of 54 feet.
19,	Henry Llewellen, . .	18	0	0	Cayuga, D., L. & W. R. R. Co., . . .	3d ward, Scranton, Lacka. co.,	Killed; run over by mine car.
June 8,	Jonathan Davis, . .	22	0	0	Capouse, L. I. & C. Co., ...	21st ward, Scranton Lacka. co.,	Killed; fall of top coal.
11,	William White, .	40	1	5	Dickson, D. & H. C. Co., ...	21 ward, Scranton, Lacka. co. .	Seriously injured; fall of roof; died 2 hours after.
11,	Owen McLean, . .	19	0	0	Jermyn No. 4, J. Jermyn, ...	Dickson City borough, Lacka co.,	Kicked by a mule; died next evening.
27,	Andrew C. Swift, . .	26	1	3	Spencer, Spencer Bro., ...	Dunmore borough, Lacka. co.,	Killed; fall of roof.
27,	Martin Getspey, . .	50	1	4	Fair Lawn, F. C. Co. Llm,, ...	7th ward, Scranton, Lacka co.,	Killed on slope; by runaway trip of cars.
July 2,	Patrick Malla, ...	17	0	0	Dickson, D. & H. C. Co., ...	21 ward, Scrantou, Lacka. co., .	Killed; caught between cars outside.

5,	Daniel Fitz Charles,	36	0	0	National, Wm. Connell & Co.,	20th ward, Scranton, Lacka. co.,	Injured; premature blast; died same evening
15,	Daniel Quinn,	31	1	4	Erie, Hillside, C. & I. Co.,	Glenwood borough, Lacka. co.,	Injured; fall of roof; died 12 o'clock same night
20,	Wm. P. Davis,	34	1	4	Dodge, D., L. & W. R. R. Co.,	Lacka. twp., Lacka. co.,	Injured; fall of roof; died 2 days after.
Aug. 1,	Thomas E. Peters,	34	1	4	Oxford, D., L. & W. R. R. Co.,	5th ward, Scranton, Lacka. co.,	Killed; caught between hoisting carriage and bunting.
12,	Andrew Quinn,	49	1	4	Coal Brook, D. & H. C. Co.,	Carbondale City, Lacka. co.,	Injured; fell of 14-inch coal; died on 15th.
16,	John Tanler,	42	1	0	Taylor, D. L. & W. R. R. Co.,	Lacka. twp., Lacka. co.,	Killed; fall of top coal.
16,	Michael Weiber,	46	1	0	do. do.,	do. do.	Killed; fall of roof.
18,	Thomas J. Alsop,	40	1	4	Jermyn No. 4, J. Jermyn	Dickson City bor., Lacka. co.,	Injured; fall of coal; died 3 days after.
30,	Wm. W. Swartz,	44	1	11	Coal Brook, D. & H. C. Co.,	Carbondale City, Lacka. co.,	Killed; fall of roof.
Sept. 1,	Hugh Hart,	63	1	0	Hampton, D., L. & W. R. R. Co.,	Lacka. twp., Lacka. co.,	Killed; fall of roof.
13,	Thomas Butler,	24	0	0	Dodge, D., L. & W. R. R. Co.,	do. do.	Killed; fall of coal.
16,	James Waller,	17	0	0	Pancoast, P. C. Co.,	Dickson City bor., Lacka. co.,	Injured; caught between car and rib; died same night.
19,	Andrew Sarah,	21	0	0	Spencers, Spencer Bro.,	Dunmore borough, Lacka. co.,	Killed; caught between large R. R. cars at breaker.
Oct. 1,	Steven Whitefield,	27	1	0	Leggitt's Creek, D. & H. C. Co.,	1st ward, Scranton, Lacka. co.,	Injured; fall of roof; died next day.
7,	James Cannon,	21	0	0	Meadow Brook, W. C. & Co.,	20th ward, Scranton, Lacka. co.,	Killed; fall of top coal.
20,	James Burke,	15	0	0	Pancoast, P. C. Co.,	Dickson City bor., Lacka. co.,	Killed; run over by loaded car in mines.
26,	James Joston,	16	0	0	Pierce, P. C. Co., Limited,	Archbald City bor., Lacka. co.,	Kicked by a mule; died next day.
31,	Robert York,	40	1	3	Hampton, D., L. & W. R. R. Co.,	Lacka. twp., Lacka. co.,	Killed almost instantly; fall of roof.
Nov. 5,	Michael T. Burke,	40	1	4	Grassey Island, G. I. C. Co.,	Winton boro., Lacka. co.,	Killed; fall of rock roof.
9,	James McGee,	18	0	0	Eddy Creek, D. & H. C. Co.,	Olyphant bor., Lacka., co.,	Injured; caught between car and ribs; died 2 days after.
12,	William McDonnell,	15	0	0	Pancoast, P. C. Co.,	Dickson City bor., Lacka., co.,	Killed by a loaded trip of mine cars.
15,	Charles Tofi,	44	1	3	Filer's Slope, J. C. Co., Limited,	Winton bor., Lacka. co.,	Injured; riding on light car and fell off.
19,	Patrick Gillard,	40	1	1	Dodge, D., L. & W. R. R. Co.,	Lacka. twp., Lacka. co.,	Killed; fall of top coal.
24,	James Baston,	35	0	0	Mount Pleasant, Wm. T. S.,	14th ward, Scranton, Lacka. co.,	Injured; fall of roof; died 2 hours after.
Dec. 7,	Casper Reeder,	25	0	0	Holden Breaker, D. L. & Co.,	Lacka. twp., Lacka. co.,	Injured; foot caught between two rails and large railroad cars ran over him; died 7 o'clock same night.
16,	Thomas Johnson,	25	1	2	Dickson, D. & H. C. Co.,	2d ward, Scranton, Lacka. co.,	Injured; fall of roof; died same night.
17,	James Whelan,	24	0	0	Green Ridge, O. S. Johnson,	Dunmore bor., Lacka. co.,	Injured; fall of roof; died next day.
24,	John Narey,	50	1	0	Marvine, D. & H. C. Co.,	1st ward, Scranton, Lacka. co.,	Injured; fall of black rock; died 2 hours after.
24,	Adam Carter,	29	1	3	Dickson, D. & H. C. Co.,	2d do. do.	Injured; fall of roof; died 39 hours after.
31,	Andrew Swerehorn,	30	1	0	Filer's, J. C. Co.,	Winton bor., Lackawanna co.,	Killed; fall of rock roof.
	57 Deaths.	57	32	110			

Causes of Fatal Accidents.

Falls of roof,	21	equal to	36.84	per cent.
Falls of coal,	11	do.	19.30	do.
Killed by mine cars,	11	do.	19.30	do.
Explosion of CH_4 gas,	2	do.	3.51	do.
Explosion of powder, "blasting,"	3	do.	5.26	do.
Falling down shafts,	2	do.	3.51	do.
Kicked by mules,	2	do.	3.51	do.
Caught by carriage in shaft,	1	equal to	1.75	per cent.
Killed by cars outside,	2	do.	3.51	do.
Killed by bucket falling on him,	1	do.	1.76	do.
Caught in breaker machinery,	1	do.	1.75	do.
Total,	57		100,00	

TABLE 5.—List of accidents occurring in and about the mines of the First Anthracite Mine District for the year ended December 31, 1887.

Date of accident.	Name of Person Injured.	Age.	Married or single.	No. of orphans.	Name of Colliery.	Location.	Nature and Cause of Accident in Brief.
Jan. 6,	William A. Price,	48	. .		14-foot vein, Von Storch, ...	2d ward, Scranton, Lacka. co., .	Slightly burned; explosion of ½ keg of powder.
7,	Michael Sweeney,	16	. .		Marvine, D. & H. C. Co., ...	1st ward, Scranton, Lacka. co., .	Fingers mashed; caught between sprag and car wheel.
7,	Daniel B. Williams,	45	. .	. .	Lackawanna Coal Company Mines, . . .	Blakeley bor., Lacka. co., . .	Slightly injured; shot through pillar.
8,	Peter Saultry, . .	15	. .	. .	Marvine, D. & H. C. Co., ...	1st ward, Scranton, Lacka. co.,	Bone over eye fractured; kicked by a mule.
10,	Martin Mullin, . .	17	. .	. .	Manville, D. & H. C. Co., ...	13th ward, Scranton, Lacka. co.,	Slightly injured; squeezed between car and prop.
10,	Charles Shene, . . .	17	. .	. .	Bellevue Shaft, D., L. & W. R. R. Co., .	Lacka. twp. Lacka. co., ...	Injured; squeezed about hips; car jumped track and caught him.
10,	Andrew Hanish, .	24	. .	. .	Dodge, D., L. & W. R. R. Co., ...	do. do. . .	Injured about head and hips; fall of roof.
11,	George Cooper, . .	40	. .	. .	Marvine, D. & H. C. Co., ...	1st ward, Scranton, Lacka. co.,	Seriously injured; hit by coal from blast.
13,	Joseph Jenkeus, .	25	. .	. .	Pancoast, P. C. Co., ...	Dickson City bor., Lacka. co., .	Slightly injured; foot caught between car and rib.
14,	Thomas Toole, . . .	24	. .	.	Dickson, D. & H. C. Co., ...	2d ward, Scranton, Lacka. co., .	Seriously injured; fall of roof.
18,	James C. Brown, . .	41	. .	. .	Bridge, B. C. Co., ...	14th ward, Scranton, Lacka. co.,	Severely burned; explosion of gas in old chamber.
20,	Wm. B. James, . .	40	. .	. .	Sloan, D., L. & W. R. R. Co., ...	Lacka. twp., Lacka. co., ...	Badly burned by explosion of gas.
24,	Barney Flanegan, .	15	. .	.	Midland Tunnel, D. & H. C. Co., . . .	Fell twp., Lacka. twp., ...	Foot slightly injured; mule stepped on it.
26,	John Baldison, . . .	16	. .	.	Grassey Island, D. & H. C. Co., ...	Olyphant bor., Lacka. co., . .	Leg broken in two places; car ran over it.
28,	William Kelly, . . .	16	. .	.	Pierce, P. C. Co., Lim., ...	Archbald bor., Lacka. co.,	Leg broken: caught between car and door.
28,	John Andrews. . . .	32	. .	.	Dickson, D. & H. C. Co., ...	2d ward, Scranton, Lacka. co., .	Slightly injured; fall of rock roof.
29,	Fenko Marshnek, . .	35	. .	. .	Simpson, N. W. C. Co., Lim., ...	Fell twp., Lacka. co., ...	Leg broken; slope rope slipped off sheave and struck his leg.
31,	George Flasaher, .	30	. .	.	Jermyn No. 1, D. & H. C. Co., . .	Jermyn bor., Lacka. co., . . .	Both legs broken; fall of 14-inch coal.
Feb. 1,	James Cleff, ...	17	. .	. .	Rackett Brook Breaker, D. & H. C. Co.,	Carbondale twp., Lacka. co., .	Injured by large railroad coal cars running over him outside of mine.
4,	John Stanton, . . .	48	. .	. .	Cayuga, D., L. & W. R. R. Co., ...	3d ward, Scranton, Lacka. co., .	Thumb cut off; fall of coal.
4,	William Bedine, . .	28	. .	. .	Dodge, D., L. & W. R. R. Co., ...	Lacka. twp., Lacka. co., ...	Slightly injured; fall of coal.
4,	Chris. Gabriel, . . .	45	.	. .	Lackawanna Coal Company, ...	Blakely bor., Lacka. co., ...	Leg broken; fall of top coal.
5,	Charles Hull.	22	. .	. .	Simpson, N. W. C. Co., Limited, . . .	Fell twp., Lacka. co., . .	Leg broken; car ran over it.
5,	Walter Samples, .	16	. .	. .	Mount Pleasant, W. T. Smith, ...	14th ward, Scranton, Lacka. co.,	Jaw-bone and teeth injured; kicked by a mule.
7,	Thomas Hagoin, . .	26	. .	. .	Cayuga, D., L. & W. R. R. Co., ...	31 ward Scranton, Lacka. co., .	Slightly cut about hips and legs; fall of coal.
8,	John H. Davis, .	27	. .	. .	Sloan, D., L. & W. R. R. Co., ...	Lacka. twp., Lacka. co., . . .	Slightly burned by explosion of gas
16,	John Walsh, ...	52	. .	. .	Dodge, D., L. & W. R. R. Co., ...	do. do. . . .	Leg and chest seriously injured; fall of roof.
16,	James Langan, . . .	52	. .	. .	Midland Tunnel, D. & H. C. Co., . . .	Fell twp., Lacka. co., ...	Some ribs fractured; stepped and fell on bumpers of car.
17,	Edward F. Maliady,	25		. .	Capouse, L. I. & C. Co., ...	21st ward, Scranton, Lacka. co.,	Seriously injured; fall of roof.

18,	John Swamson,	32	do. do.	do. do. do.		Slightly cut on leg; struck by coal from blast.
21,	William Sheaffer,	17	Richmond, E. H. C. & I. Co.,	do. do. do.		Leg broken; fell and car ran against it.
21,	Michael McCue,	59	Cayuga, D., L. & W. R. R. Co.,	31 ward, Scranton, Lacka. co.,		Slightly cut about head, and foot bruised; fall of bony coal.
25,	Patriek Dempsey,	38	Von Storch, C. Vein, D. & H. C. Co.,	2d ward, Scranton. Lacka. co.,		Slightly injured; fall of roof.
Mar. 3,	Patrick Martin,	19	Coal Brook. D. & H. C. Co.,	Carbondale City, Lacka. co..		Back slightly injured; fall of roof.
3,	John Pringle,	40	Manville, D. & H. C. Co.,	13th ward, Scranton, Lacka. co.,		Leg and arm broken; set off match causing immediate explosion.
4,	Patrick Coolihan,	60	Leggett's Creek, D. & H. C. Co.,	1st ward, Scranton, Lacka. co.,		Back slightly hurt fall of bony coal.
11,	John Meehan,	27	Jermyn No. 4. J. Jermyn,	Dickson City bor., Lacka. co.,		Fingers severely bruised; jammed by iron rail.
12,	John Thomas.	42	Dodge, D.. L. & W. R. R. Co.,	Lacka. twp., Lacka. co.,		Slightly injured; explosion of gas
12,	A. J. Driscoll,	24	Grassey Island, G. I. C. C. Co., Limited,	Winton bor., Lacka. co.,		Seriously injured about head; shot through a pillar.
12,	John Kuzmiock,	27	do. do. do.	do do		Slightly injured by same shot.
15,	Alfred Crew,	15	Oxford, D., L. & W. R. R. Co.,	5th ward, Scranton, Lacka. co.,		Right arm broken; caught under empty car in mine.
18,	James Jones,	17	Taylor, D., L. & W. R. R. Co.	Lacka. twp., Lacka co.,		Arm broken; thrown from cars.
19,	M. T. Green,	40	Mount Pleasant, Wm. T. Smith,	1st ward, Scranton. Lacka. co.,		Slightly injured; fall of roof.
30,	Lewis James,	59	Von Storch, D. & H. C. Co.,	2d ward, Scranton, Lacka. co.,		
30,	Llewellen Jones,	50	do. do.	do. do. do.		
30,	David Lewis,	38	do. do.	do. do. do.		Injured by an explosion of fire damp.
30,	William Littlejohn,		Dickson, D. & H. C. Co.,	do. do. do.		
30,	James Morgan,		do. do.	do. do. do.		
Apr. 2,	Anthony Newcomb,	16	Holden, D., L. & W. R. R. Co.,	Lacka. twp., Lacka. co..		Ankle slightly injured; foot caught in frog
5,	James Hughes,	23	Capouse, L. I. & C. Co.,	21st ward, Scranton, Lacka. co.,		Jaw-bone injured: struck by lever while putting loaded mine car on track.
8,	John Harris,	47	Forest City No. 2, H. C. & I. Co,	Clifford twp., Susq. co.,		Both these men were seriously injured; fall of roof slate: Harris leg broken; Watkins seriously bruised about body.
8,	Thomas Watkins,	40	do. do.	do. do.		
9,	Anthony Naugtin,	14	Manville, D., L. & W. R. R. Co.	13th ward, Scranton, Lacka., co.,		One eye destroyed: kicked by a mule.
12,	John Allen,	15	Wilson's Tunnel, D. & H. C. Co.,	Fell twp., Lacka. co.,		Slightly injured; kicked by a mule.
14,	Patrick McDonnell,	14	No. 3 Shaft, D. & H. C. Co.,	Carbondale City, Lacka. co.,		Arm and collar-bone broken; riding on bumper of car and fell.
15,	Anthony O'Hara,	21	Green Ridge, O. S. Johnson,	Dunmore bor., Lacka. co.,		Injured internally; car jumped track and caught him under it.
20,	Owen Quinn,	60	Meadow Brook, Wm. Connell & Co.,	20th ward, Scranton, Lacka. co.,		Leg broken, scalp wound and other bruises; struck by mine car.
20,	Thomas Mullarkey,	15	Dickson, D. & H. C. Co.,	2d ward, Scranton, Lacka. co.,		Fell in front of cars, injured his right leg and hand.
22,	Gomer Hughes,	20	Oxford, D., L. & W. R. R. Co,	5th ward, Scranton, Lacka. co.,		Both these men badly burned; explosion of gas; went into place not working, against orders.
22,	Thomas Morgan,	20	do. do.	do. do do.		
23,	C. C. Battenberg,	45	White Oak Breaker, D. & H. C. Co.,	Archbald bor., Lacka. co.,		Leg broken; struck by wire rope on culm plane.
23,	David Jones.	21	Taylor, D., L. & W. R. R., Co.,	Lacka. twp.. Lacka. co..		Arm slightly injured; fall of roof.
25,	Patrick Jennings,	16	Pine Brook, L. I. & C. Co.,	7th ward, Scranton, Lacka. co.,		Back slightly injured; caught between car and roof.
27.	Phillip Farrel,	17	Coal Brook, D. & H. C. Co.,	Carbondale City, Lacka. co.,		Left arm broken at wrist; caught by cars.
May 6,	Thomas Williams,	45	Richmond, E. H. C. & I. Co.,	21st ward, Scranton, Lacka. co.,		Back slightly injured: fall of roof.
9,	John Burke,	23	Pierce, Pierce C. Co., Limited,	Archbald bor., Lacka. co.,		Jaw bone broken; fell of coal.
10,	John Ryan,	30	Olyphant No. 2. D. & H. C. Co.,	Olyphant bor., Lacka co.,		Slightly injured: fall of roof.
12,	John Roland,	13	Sloan, D., L. & W. R. R. Co.,	Lacka. twp., Lacka. co.,		Seriously injured; fall of top coal.
12,	Reese Thomas,	31	do. do.	do. do.		Slightly injured by same fall.
12,	William Thomas,	14	do. do.	do do		Injured; kicked in face by a mule.
13,	Peter Munly,	20	Leggett's Creek, D. & H.C. Co.,	1st ward, Scranton, Lacka. co.,		Toe crushed; car ran over it.

TABLE 5.—Continued.

Date of accident.	NAME OF PERSON INJURED.	Age	Married or single.	No. of orphans.	Name of Colliery.	Location.	Nature and Cause of Accident in Brief.
May 18,	William Kane,	14			Green Ridge, O. S. Johnson,	Dunmore bor., Lacka. co.,	Seriously injured; caught between car and rib.
19,	William Hinkley,	45			Richmond, E. H. C. & I. Co.,	21st ward, Scranton, Lacka. co.,	Slightly injured; fall of coal.
27,	James McHall,	37			Hampton, D., L. & W. R. R. Co.,	Lacka. twp., Lacka. co.,	Seriously injured; fall of roof.
27,	William Elston,	39			Olyphant No 2, D. & H. C Co.,	Olyphant bor., Lacka. co.,	Slightly injured; fall of roof.
31,	Thos. A. Cavanagh,	30			Fair Lawn, F. L. C. Co., Limited,	7th ward, Scranton Lacka. co.,	Slightly burned; explosion of gas.
June 1,	Michael Mack,	15			Spencer, Spencer Bro.,	Dunmore bor., Lacka. co.,	Leg broken; fell under a car.
1,	Leonl Finigau,	16			Bridge, Bridge C. Co., Limited,	14th ward, Scranton, Lacka. co.,	Dangerously hurt; caught between car and rib.
4,	John Gilgallon,	45			Pancoas, P. C. Co.,	Dickson City bor., Lacka. co.,	Slightly burned; explosion of gas.
11,	George Cremer,	40			do. do.	do. do.	Knee-joint dislocated; a piece of coal slid against it.
18,	John McCarty,	17			Dodge, D., L. & W. R. R. Co.,	Lacka. twp., Lacka. co.,	Hand slightly injured; caught between car and roof.
18,	Edward Askins,	40			Manville, D., L. & W. R. R. Co,	13th ward, Scranton, Lacka. co.,	Both these men were burned by an explosion of gas while in the act of timbering shaft; they carried naked lights against strict orders not to do so.
18,	Archy Davis,	40			do. do.	do. do. do.	
21,	Isaac Ashton,	32			Holden, D., L. & W. R. R. Co.,	Lacka. twp., Lacka. co.,	These five men were slightly burned by an explosion of fire-damp.
21,	Watkin Morgan,	53			do. do.	do. do.	
21,	Dave Reese,	39			do. do.	do. do.	
21,	John Beven,	35			do. do.	do. do.	
21,	Philip Mulderig,	45			do. do.	do. do.	
22,	George Williams,	62			Capouse, Lacka. I & C. Co.,	21st ward, Scranton, Lacka. co.,	Slightly injured; fall of bony coal.
22,	Thomas Mellody,	32			Manville, D., L. & W. R. R. Co.,	13th ward, Scranton, Lacka. co.,	Slightly injured; fall of slate.
23,	Patrick Bohan,	45			Taylor, D., L. & W. R. R. Co.,	Lacka. twp., Lacka. co.,	Slightly injured by mine cars.
23,	William Davis,	16			Olyphant No 2, D. & H. C. Co.,	Olyphant bor., Lacka. co.,	Slightly injured; caught by mine cars.
27,	Michael Sweeney,	13			Fair Lawn Breaker, F. L. C. Co.,	7th ward, Scranton, Lacka. co.,	Arm broken; caught in breaker.
July 1,	Patrick Hamton,	25			Pyne, D. L. & W. R. R. Co.,	Lacka. twp., Lacka. co.,	Left ankle dislocated; fall of slate.
5,	Charles Ibell,	28			Bellevue Slope, D., L. & W. R. R Co.,	do. do.	Slightly injured on foot; fall of top coal.
5,	William B. Lewis,	30			Bellevue Shaft, D., L. & W. R. R. Co.,	do. do.	Both these men were severely injured by fall of roof; Lewis arm broken: Garrey back injured.
5,	Jerry Garrey,	50			do. do.	do. do.	
8,	Wm. J. Sanderson,	38			Von Storch, D. & H. C. Co.,	2d ward, Scranton, Lacka. co.,	Slightly injured while in the act of lifting loaded car on track.
8,	Morris Williams,	45			Keystone, H. C. & I. Co.,	Glenwood bor., Lacka. co.,	Leg broken; struck by flying piece of coal from blast.
13,	Benjamin Evans,	46			Von Storch, D. & H. C. Co.,	2d ward, Scranton, Lacka. co.,	Ankle dislocated; fall of top coal.

19,	James Shay,	30	Taylor, D., L. & W. R. R Co.,	Lacka. twp., Lacka. co.,	Slightly injured; fall of coal.
22,	John Evans,	14	Archbald, D., L. & W. R. R. Co.,	do. do.	Burned by kerosene igniting in bottle he carried in his pocket.
22,	Peter Newcomb,	22	Holden, D., L. & W. R. R. Co.,	do. do.	Slightly injured; fall of coal.
22,	Llewellen Llewellen,	32	Cayuga, D., L. & W. R. R. Co.,	3d ward, Scranton, Lacka. co.,	Cut slightly about head, arm and hand; fall of coal.
Aug. 2,	David J. Davis,	16	Central, D., L. & W. R. R. Co.,	15th ward, Scranton, Lacka. co.,	Leg badly injured; fell under trip of empty cars.
5,	John Lowrey,	21	Capouse, L. I. & C. Co.,	21st ward, Scranton, Lacka. co.,	Scalp wound on head; hit against post while jumping off cars.
10,	David Price,	45	Mount Pleasant, W. T. Smith,	14th ward, Scranton, Lacka. co.,	Leg broken in "New Shaft."
11,	Con Ludgate,	16	Taylor, D., L. & W. R. R. Co.,	Lackawanna twp., Lacka. co.,	Leg slightly injured by falling under mine cars.
12,	Anthony Gillespie,	30	Grassey Island, G. I. C. Co.,	Winton bor., Lacka. co.,	Slightly injured; leg cut by an axe he was using.
13,	Peter Mahon,	15	Diamond, D., L. & W. R. R. Co.,	21st ward, Scranton, Lacka. co.,	Slightly injured on leg; fell down on culm dump.
15,	Mike Coleman,	16	Oxford, D., L. & W. R. R. Co.,	5th ward, Scranton, Lacka. co.,	Severely burned by powder explosion; threw lighted squib into a keg.
15,	Owen Thomas,	30	do. do.	do. do.	Hip dislocated; fall of rock.
15,	James Cawley,	21	S. V. White, Winton C. Co.,	Winton bor., Lacka. co.,	Seriously injured; struck by coal from blast fired in next chamber.
16,	Alfred Paffrey,	42	Green Ridge, O. S. Johnson,	Dunmore bor., Lacka. co.,	Leg broken.
17,	William Jones,	16	Central, D., L. & W. R. R. Co.,	15th ward, Scranton, Lacka. co.,	Slightly injured; fell off mine cars.
17,	Wm. Bridgewater,	53	Eddy Creek, D. & H. C. Co.,	Olyphant bor., Lacka. co.,	Leg broken; hit by coal from blast.
18,	Roger Haggerty,	47	Sloan, D., L. & W. R. R. Co.,	Lackawanna twp., Lacka. co.,	Right leg severely cut; fall of top bony coal.
19,	Mike Cooley,	30	Holden, D., L. & W. R. R. Co.,	do. do.	Slightly injured; caught between body and top of culm car.
Sept. 1,	John Davitt,	19	Bellevue shaft, D., L. & W. R. Co,,	do. do.	Slightly injured; caught between a trip of cars in mines.
1,	John McGrall,	34	Grassey Island, G. I. C. Co.,	Winton bor., Lacka. co,,	Slightly injured by jumping from hoisting bucket in shaft; fell thirty feet.
2,	Samuel Coleman,	36	Jermyn No. 4, J. Jermyn,	Dickson City bor., Lacka. co.,	Severely burned but not seriously; explosion of gas.
3,	D. J. Evans,	45	Eaton, Jones, Simpson & Co.,	Archbald bor., Lacka. co.,	Temple and arm severely injured.
8,	Owen Sweeney,	55	Grassey Island, G. I. C. Co.,	Winton bor., Lacka. co.,	Slightly injured; fall of slate roof.
10,	John Morgan,	15	Capouse, L. I. & Coal Co.,	21st ward, Scranton, Lacka. co.,	Leg badly cut; caught between bumpers of mine cars.
12,	Wm. Westington,	43	Keystone. H. Coal & Iron Co.,	Glenwood bor., Lacka co.,	Severely crushed in breast; fall of rock.
13,	Patrick O'Boyle,		Marvine, D. & H. Canal Co.,	1st ward, Scranton, Lacka. co.,	Slightly injured; fall of rock.
14,	Thomas Owens,	38	Taylor, D., L. & W. R. R. Co.,	Lackawanna twp., Lacka. co.,	Leg broken: fall of rock.
15,	James Hood,	34	Pierce, Jones, Simpson & Co.,	Archbald bor., Lacka. co.,	Back hurt: fall of coal.
17,	Timothy Cloherty,	28	Van Storch, D. & H. Canal Co.,	2d ward, Scranton, Lacka. co.,	Slightly injured; fall of top coal.
17,	Thomas Bell,	15	Pyne, D., L. & W. R. R. Co.,	Lackawanna twp., Lacka. co.,	Left arm broken; fell in front of mine car.
19,	Richard Phillips,	35	Oxford, D., L. & W. R. R. Co.,	5th ward, Scranton, Lacka. co.,	Several cuts on arms, hips and legs; permature blast.
20,	James Swift,	20	Pine Brooke, Lackawanna I. & C. Co.,	7th ward, Scranton, Lacka. co.,	Slightly injured; fall of roof.
21,	William Wilson,	27	Pyne, D., L. & W. R. R. Co.,	Lackawanna twp , Lacka. co.,	Injured slightly; fall of roof.
22,	Richard Norton,	50	Hyde Park, D., L. & W. R. R. Co.,	5th ward, Scranton, Lacka. co.,	Ankle dislocated; fall of coal.
23,	Thomas Cummings,	30	Taylor, D., L. & W. R. R Co.,	Lackawanna twp., Lacka. co.,	Foot slightly injured; fall of coal.
24,	Daniel Kelliher,	17	Fair Lawn, F. L. C. Co., Limited,	7th ward, Scranton, Lacka. co ,	Leg bruised; caught by cars.
26,	John Egan,	16	Taylor, D., L. & W. R. R. Co.,	Lackawanna twp., Lacka. co.,	Arm broken; struck by mine car.
26,	Patrick Collins,	50	Archbald, D., L. & W. R. R. Co.,	do. do.	Right leg fractured; fall of roof.
26,	Frank Mulhearn,	40	do. do.	do. do.	Hand caught under car.
27,	Edward Jackson,	15	Jermyn No. 4, John Jermyn,	Dickson City bor., Lacka. co.,	Slightly injured; kicked by mule.
27,	John Richards,	17	Bridge, Bridge Coal Co., Limited,	14th ward, Scranton, Lacka. co.,	Slightly injured; caught between cars in mine.

TABLE No. 5—Continued.

Date of accident.	NAME OF PERSON INJURED.	Age.	Married or single.	No of orpnans.	Name of Colliery.	Location.	Nature and Cause of Accident in Brief.
Sept.30,	John Horges, ...	15	. .	. .	Taylor, D., L. & W. R. R. Co., ...	Lackawanna twp., Lacka. co.,	Badly brulsed about the eye.
30,	James Lynch, ...	. .	. .	. .	Marvine, D. & H. Canal Co., ...	1st ward, Scranton, Lacka. co.,	Badly brulsed on back and breast; fall of rock.
Oct. 1,	Bryan Duffy, . . .	47	. .	. .	Dodge, D., L. & W. R. R. Co., ...	Lackawanna twp., Lacka. co.,	Slightly injured on head and ankle; fall of coal.
3,	Peter Walsh, ...	15	. .	. .	Manville. D. & H. Canal Co., ...	15th ward, Scranton, Lacka. co.,	Slightly injured; fell in front of a car in mines.
7,	Frank Freeman, . .	29	. .	. .	Tripps, D., L. & W. R. R. Co., ...	21st ward, Scranton, Lacka. co.,	Slightly injured; permature blast.
15,	John Durklu, ...	16	.	. .	Eaton, Jones, Simpson & Co., ...	Archbald bor., Lacka. co., . .	Slightly injured; fell under car.
17,	John Eichholzer, . .	15	. .	. .	Forest City, Hillside Coal & Iron Co., . .	Clifford twp., Susquehanna co.,	Leg broken; caught by car in mines.
18,	William Hollilday, .	17	.	. .	Taylor, D., L. & W. R. R. Co., ...	Lackawanna twp., Lacka. co.,	Head injured; squeezed between car and prop.
18,	James Nolan, . . .	16	. .	. .	Cayuga. D., L. & W. R. R. Co., ...	3d ward, Scranton, Lacka. co.,	Thumb cut off while in the act of coupling cars.
19,	Frank Green, . . .	15	. .	. .	Green Ridge, O. S. Johnson, ...	Dunmore bor., Lacka co , .	Leg broken; mule fell on him.
24,	Martlu Igo, ...	25	. .	. .	Pine Brook, Lackawanna I. & C. Co,, . .	7th ward, Scranton, Lacka. co.,	Seriously injured on back, legs paralyzed; fall of roof.
25,	Patrick Caffrey, . .	20	. .	. .	Diamond, D., L. & W. R. R. Co., ...	21st ward, Scranton, Lacka. co.,	Foot slightly injured.
26,	William Hughes, . .	17	. .	. .	Dolph, Dolph Coal Co., Limited, ...	Winton bor., Lacka. co., ...	Leg broken; fell in front of loaded car in mine.
26,	John Kelley, ...	16	. .	. .	Von Storch, Del. & Hud. Canal Co., .	2d ward, Scranton, Lacka. co., .	Shoulder blade broken; squeezed between mule and prop.
26,	Charles Kane, ...	16	. .	. .	S. V. White, Winton C. Co., Limited, .	Winton bor., Lacka. co., ...	Slightly injured by runaway trip of cars on plane.
27,	Joseph Mahady, . .	18	. .	. .	do. do. .	do. do.	Seriously injured by same trip of runaway cars.
28,	John Toolan, ...	15	. .	. .	Pine Brook, Lackawanna I. & C. Co., .	7th ward, Scranton, Lacka. co.,	Severely injured by cars.
28,	Paul Bright, ...	38	. .	. .	Marvine, Del. & Hudson Canal Co., . .	1st ward, Scranton, Lacka. co.,	Slightly hurt on back by coal from blast.
28,	Thomas Price, . . .	17	. .	. .	Pyne, D., L. & W. R. R. Co., ...	Lackawanna twp., Lacka. co., .	Slightly injured; kicked by mule.
28,	Anthony Scott, . . .	60	. .	. .	Wilson Creek, D., L. & H. Coal Co., .	Fell twp., Lacka. co., . . .	Slightly injured on body and heel by cars.
31,	John Brennan, . .	31	. .	. .	Bridge, Bridge Coal Co., Limited., . . .	14th ward, Scranton, Lacka. co.,	Slightly burned; explosion of gas.
Nov. 1,	Michael Butler, . .	36	.	. .	Olyphant No. 2, D. & H. Canal Co., . . .	Olyphant bor., Lacka. co., . . .	Leg mashed and amputated; caught in sheave wheel on culm plane.
2,	DominickGelmartin,	65	. .	. .	Tripp, Del., Lacka. & W. R. R. Co., . .	21st ward, Scranton, Lacka. co.,	These three men were going down the shaft in the safety carriage to work when the clutches caught on the guides, bringing the carriage to a sudden stop, which jarred and shook them severely.
2,	John McGloughlin, .	58	. .	. .	do. do. . .	do. do.	
2,	Peter Rider, ...	30	. .	. .	do. do. . .	do. do.	
5,	Thomas H. Huddy, .	34	. .	. .	Simpson, North-Western Coal Co., . . .	Fell twp., Lacka. co., ...	Right leg broken; fall of rock.
5,	William J. Thomas,	52	. .	. .	Oxford, Del., Lacka. & W. R. R. Co., .	5th ward, Scranton, Lacka. co.,	Slightly burned on face and hands; explosion of gas.
7,	John King, ...	13	. .	. .	Cayuga, Del., Lacka. & W. R. R. Co., .	3d ward, Scranton, Lacka. co.,	Leg fractured; fell from beam in breaker.

8,	Mich. McGloughlin,	22		Archbald, Del., Lacka. & W. R. R. Co.,	Lackawanna twp., Lacka. co.,	Right leg fractured; fall of roof.
8,	M. P. Riley,	45		do. do.	do. do.	Slightly injured; same fall.
9,	Daniel Campbell,	14		Rackett Brooke, D. & H. C. Co.,	Carbondale twp., Laeka. co.,	Injured slightly; run over by cars on plane outside.
9,	Michael O'Brien,	22		No. 2 Diamond, D., L. & W. R. R. Co.,	21st ward, Scranton, Lacka. co.,	Leg broken; piece of coal fell on lt.
10,	Thomas Hodson,	47		Jermyn No. 4, John Jermyn,	Dickson City bor., Lack. co.,	Injured; fell between platform and car while loading same.
14,	William Davis,	45		do. do.	do. do.	Injured, three ribs broken; fall of roof.
14,	Joseph Richardson,	32		do. do.	do. do.	Slightly injured by same fall.
14,	Reese R. Griffiths, Jr.,	17		S. V. White, Winton Coal Co., Limited,	do. do.	Leg fractured while riding on mine locomotive.
15,	William Watkins,	21		Central, D., L. & W. R. R. Co.,	15th ward, Scranton, Lacka. co.,	Arm fractured in two places; fall of roof.
16,	James Watkins,	47		Oxford, D., L & W. R. R. Co.,	5th ward, Scranton, Lacka. co.,	Two fingers cut off; fall of roof.
16,	Richard Jones,	31		Eddy Creek, Del. & Hud. Canal Co.,	Olyphant bor., Lacka. co.,	Severely injured on back; fall of top and bony coal.
17,	Peter Bernott,	40		Bridge, Bridge Coal Co., Limited,	14th ward, Scranton, Lacka. co.,	Burned slightly; explosion of gas.
17,	Owen W. Thomas,	32		Oxford, D., L. & W. R. R. Co.,	5th ward, Scranton, Lacka. co.,	Slightly injured; fall of roof.
18,	John Dixon,	44		Filer's slope, Jessup Coal Co.,	Winton bor., Lacka. co.,	Slightly injured; fall of roof.
18,	Thomas Barrett,	41		do. do.	do. do.	Slightly injured; same fall.
18,	Patrick Fahes,	20		Gypsey Grove, Penna. Coal Co.,	Dunmore bor., Lacka co.,	Leg broken; car run over it.
19,	Thos. O. McCormick,	16		Pancoast, Pancoast Coal Co.,	Dickson City bor., Lacka. co.,	Head badly cut; struck it against the rib.
19,	Evan Hopkins,	17		Sloan, Del., Lacka. & W. R. R. Co.,	Lackawanna twp., Lacka. co.,	Arm splintered; kicked by a mule.
21,	Mike J. Quinn,	41		Coal Brook, D. & H. Canal Co.,	Carbondale City, Lacka. co.,	Slightly injured; fall of coal.
21,	James Gallagher,	38		Hampton, D., L & W. R. R Co.,	Lackawanna twp., Lecka. co.,	Slightly injured; fall of coal.
25,	Mike O'Connor,	16		Coal Brook, D. & H. Canal Co.,	Carbondale City, Lacka. co.,	Slightly injured; caught between mine cars.
25,	Joseph Robinson,	43		Olyphant No. 2, D. & H. Canal Co.,	Olyphant bor., Lacka. co.,	Injured slightly; fall of roof.
25,	Patrick Flanigan,	55		Pierce, Jones, Simpson & Co.,	Archbald bor., Lacka. co.,	Slightly injured by runaway trip of cars on outside plane.
28,	James Garraty,	16		Pine Brook, Lacka. Iron & Coal Co.,	7th ward, Scranton, Lacka. co.,	Slightly injured on hips; caught between cars.
30,	James Durkin,	16		Hampton, D., L. & W. R. R. Co.,	Lackawanna twp., Lacka. co.,	Severely bruised on hips; caught between car and prop.
30,	Jake Moon,	18		Edgerton, Edgerton Coal Co., Limited,	Archbald bor., Lacka. co.,	Leg fractured; caught between mine cars.
Dec. 2,	Charles Jourdan,	43		Coal Brook, D. & H. Canal Co.,	Carboudale City, Lacka. co.,	Foot slightly injured; a piece of coal rolled on lt.
2,	David Avery,	35		Leggett's Creek, D. & H Canal Co.,	1st ward, Scranton, Lacka. co.,	Foot slightly hurt; fall of roof.
3,	John Herman,	60		Hyde Park, D., L. & W. R. R. Co.,	5th ward, Scranton, Lacka. co.,	Injured about body; caught between cars.
3,	Reese T. Evans,	65		No. 2 Diamond, D., L. & W. R. R. Co.,	21st ward, Scranton, Lacka. co.,	Arm fractured; fell from mine locomotive.
3,	George Evans,	26		do. do.	do. do.	Leg fractured; fell from mine locomotive.
3,	Albert Jellson,	16		Grassey Island, G. I. C. Co., Limited,	Winton bor., Lacka. co.,	Slightly injured; squeezed between car and rib.
3,	John Loftus,	26		Cayuga, D., L. & W. R. R. Co.,	3d ward, Scranton, Lacka. co.,	Calf of leg badly crushed; caught between trucks.
5,	William Burke,	15		Pancoast, Pancoast Coal Co.,	Dickson City bor., Lacka. co.,	Injured; cut on top of head.
5,	David W. Williams,	21		Pyne, D., L. & W. R. R. Co.,	Lackawanna twp., Lacka. co.,	Severely injured by a fall of coal.
5,	William Dingle,	17		Pine Brook, Lackawanna I. & C. Co.,	7th ward, Scranton, Lacka. co.,	Arm broken; fell under mine car.
6,	Thomas Battee,	50		Filer's slope, Jessup Coal Co., Limited,	Winton bor., Lacka. co.,	Ankle slightly injured; fall of rock.
8,	Charles Simpson,	40		Richmond, Elk Hill C. & I. Co.,	21st ward, Scranton, Lacka. co.,	Slightly injured; fall of roof.
8,	Michael McDonnell,	45		Pancoast, Pancoast Coal Co,	Dickson City bor., Lacka. co.,	Hip dislocated; fall of roof.
9,	Alf Payne,	45		Mount Pleasant, W. F. Smith,	14th ward, Scranton, Lacka. co.,	Rib fractured; fall of roof.
9,	Mike Hehir,	50		Hampton, D., L. & W. R. R. Co,	Lackawanna twp., Lacka, co.,	Slightly injured; fall of bony coal.
9,	Griff M. Griffiths,	21		Capouse. Lackawanna I. & C. Co.,	21st ward, Scranton, Lacka. co.,	Slightly injured; fall of rock.
11,	William Shaffer,	16		Grassey Island, D. & H. Canal Co.,	Olyphant bor., Lacka. co.,	Leg slightly injured; kicked by mule.
12,	John Flemming,	48		Grassey Island, G. I. Coal Co., Limited,	Winton bor., Lacka. co.,	Compound fracture of leg; hit by coal flying from blast.
16,	Reese Simmes,	16		Leggett's Creek, D. & H. Canal Co.,	1st ward, Scranton, Lacka. co.,	Injured; fell in front of cars.
16,	John Smith,	37		Dodge, D., L. & W. R. R. Co.,	Lackawanna twp., Lacka. co.,	Back and ankle slightly injured; fall of roof.

TABLE No. 5—Continued.

Date of accident.	NAME OF PERSON INJURED.	Age.	Married or single.	No. of orphans.	Name of Colliery.	Location.	Nature and Cause of Accident in Brief.
Dec. 16,	William Yorrick, . .	22	. .	. .	Pierce breaker, Pierce Coal Co., ...	Winton bor.. Lacka. co., ...	Hip slightly injured; kicked by mule.
17,	John Surmers, . . .	16	. .	. .	Pierce mine, Pierce Coal Co., ...	Archbald bor., Lacka. co., . . .	Leg fractured; fell in front of mine cars.
17,	William Williams, .	23	. .	. .	Dodge, D., L. & W. R. R. Co., ...	Lackawanna twp., Lacka. co., .	Foot slightly injured; fall of roof.
19,	Patrick Cox, ...	40	. .	. .	Eaton, Jones, Simpson & Co., ...	Archbaid bor., Lacka. co., . . .	Face and arms slightly burned by powder explosion.
21,	Thomas Connors, . .	25	. .	. .	Bridge, Bridge Coal Co., Limited, ...	14th ward, Scranton, Lacka. co.,	Arms and face burned; explosion of gas.
22,	John O'Neil, ...	14	. .	. .	Cayuga, D., L. & W. R. R. Co., ...	3d ward, Scranton, Lacka. co.,	Three fingers mashed; car ran over them.
23,	James Mahon, . . .	18	. .	. .	Von Storch, D. & H. Canal Co., ...	2d ward, Scranton, Lacka. co.,	Slightly injured; caught between car and prop in mine.
28,	John Moran, ...	30	. .	. .	Manville, D., L. & W. R. R. Co., ...	13th ward, Scranton, Lacka. co.,	Slightly injured; fall of roof.
31,	Patrick Rainy, . . .	26	. .	. .	Archbaid, D., L. & W. R. R. Co., ...	Lackawanna twp., Lacka. co., .	Slightly injured; fall of bony coal.
31,	James Saltry, ...	22	. .	. .	Brisbin, D., L. & W. R. R. Co., ...	3d ward, Scranton, Lacka. co.,	Jaw bone fractured; fall of roof.

There were 225 accidents for year A. D. 1887.

TABLE No. 6—Giving names of collieries, mode of ventilation, amount of ventilation, condition of ventilation, number of splits of air, number of persons working in mines, pressure of water-gauge, number of horses and mules, &c.

Name of Collieries.	Mode of ventilation.	Dimension of Fan.		Revolutions per minute.	Pressure of water gauge in inches.	Dimensions or area D of furnace grate.	Number of air splits.	Total number of persons working in mines.	Amount of Ventilation.			Condition of ventilation.	Number of horses and mules.	Remarks.
		Diameter in feet.	Width of face in feet.						At intake.	At face of workings.	At outlet.			
Archbald Mines, F or Rock vein,	Fan,	12	3½	160	8/10	. . .	1	40	24 274	19,745	28,100	Good,	5	Mines owned and operated by Del., Lack. & W. R. R. Co.
Archbald Mines, H or New County vein,				160	8/10	. . .	5	210	81,600	84,025	87,110	do.	30	
Bellevue Shaft, G or Big vein,	Fan,	14	4	120	1 2/10	. . .	2	69	139,896	50,699	153,215	do.	11	
Bellevue Shaft, I or Clark vein,					1 2/10	. .	3	102		84,200		do.	18	
Bellevue Slope, Rock vein,	Fan,	14	4	100	1	.	2	81	55,200	42,680	58 740	do.	15	
Brisbin Shaft, Big vein,	Fan,	14	4	120	8/10	. . .	2	53	43,181	38,430	45,120	do.	5	
Brisbin Shaft, Clark vein,					8/10	. . .	2	107	65,912	59,316	68,208	do.	9	
Continental Shaft, Clark vein,	Fan,	12	3½	126	7/10	. .	7	242	85,000	70,350	90,500	do.	35	
Central Shaft, Rock vein,	Fan,	14	4	124	1 2/10	. .	3	97	39,936	39,088	39,936	do.	11	
Central Shaft, Big vein,	Fan,	14	3⅘	144	1 1/10	.	7	217	135,002	116,596	152 060	do.	32	
Cayuga Shaft, Diamond vein,	Fan,	12	3½	155	1 2/10	. .	2	88	32 805	30.856	35,545	do.	13	
Cayuga Shaft, Big vein,					1 2/10	. .	2	81	64,831	54,804	65,836	do.	11	
Dodge Shaft, Rock vein,	Fan,	16	4⅘	88	7/10	. .	2	83	66 564	51,170	62,712	do.	18	
Dodge Shaft, Big vein,					7/10	. .	4	119	127,091	121,242	143,644	do.	25	
Diamond No. 2 Shaft, Diamond vein,	Fan,	14	4	100	8/10	. . .	1	60	70,120	65,215	72,180	do.	12	
Holden Shaft, Big vein,	Fan,	25	8	45	8/10	. .	3	73	79,198	67,932	84,000	do.	11	
Holden Shaft, New county vein,					8/10	. . .	2	65	60,684	38.858	77,308	do.	12	
Hampton Shaft, Diamond vein,	Fan,	14	4	122	9/10	. . .	3	128	82.434	37,529	83,000	do.	25	
Hampton Shaft, Rock vein,					9/10	. . .	2	83		28,822		do.	15	
Hyde Park Shaft, Diamond vein,	Fan,	14	4	96	8/10	. . .	1	72	29,310	25,350	30,080	do.	13	
Hyde Park Shaft, New County vein,					8/10	. . .	2	79	48,980	43,416	51,384	do.	13	
Manvilie Shaft, Clark vein,	2 fans,	20	5	70	1 1/10	. .	7	311	97,470	94,925	123,000	do.	37	
		14	4											
Oxford Shaft, Big vein,	Fan,	14	4	100	1 3/10	. . .	3	86	139,886	50,110	141,930	do.	10	
Oxford Shaft, Clark vein,					1 3/10	. . .	4	125		70,613		do.	26	
Pyne Shaft, New County vein,	Fan,	14	4	150	85/100	. . .	2	60	21,340	23,942	23 122	do.	7	
Pyne Shaft, Clark vein,					85/100	. . .	5	183	81,590	73,889	109 314	do.	27	
Sloan Shaft, Big vein,	Fan,	12	3½	120	85/100	. .	2	49	34,184	25.552	38 069	do.	7	
Sloan Shaft, Clark vein,					85/100	. .	6	263	90 967	94.918	93 849	do.	47	
Taylor Shaft, New County vein,	2 fans,	14	4	140	1 1/10	. . .	5	265	141,515	133 114	175,200	do.	41	
Taylor Drift, Rock vein,	1 fan,	12	3½	110	1/10	. . .	2	48	61,840	56,600	67,480	do.	10	
Tripp Shaft, Clark vein,	2 fans,	14	4	121	1 2/10	. . .	8	229	221,317	214,748	224,812	do.	35	

TABLE No. 6—Continued.

NAME OF COLLIERIES	Mode of ventilation.	DIMENSION OF FAN.		Revolutions per minute.	Pressure of water gauge in inches.	Dimensions or area D of furnace grate.	Number of air splits.	Total number of persons working in mines.	AMOUNT OF VENTILATION.			Condition of ventilation.	Number of horses and mules.	Remarks.
		Diameter in feet.	Width of face in feet.						At intake.	At face of workings.	At outlet.			
Coal Brook Tunnel, Bottom vein, Midland Tunnel, Bottom vein,	Fan,	17	4	101	1 15/100 1 15/100	. . .	4	226	45 040	38.780	45 780	Good,	30	Mines owned and operated by D. & H. C. Co.
Dixon Shaft, G or Big vein,	Fan,	12	4	114	9/10	. . .	3	24	79.074	62.449	81,962	do.	29	
Dixon Shaft, Clark vein,	Ventllated, Von Storch	Clark	vein	fan.	. . . .	. .	2	96	25.585	23.823	25 932	do.	6	
Eddy Creek Shaft, Grassey Island vein, Olyphant No. 2. Shaft, Grassey Island vein,	Fan,	20	5	90	75/100 75/100	. . .	9	350	97,380	79.785	108,120	do.	16	
Grassey Island Shaft, Grassey Island vein,	Fan,	20	5	63	8/10	. . .	3	213	43.550	42 840	41,920	do.	40	
Jermyn No. 1 Shaft, Archbald vein,	Fan,	17	4	68	8/10	. . .	3	214	67 019	50 321	73 298	do.	22	
Leggitt's Creek Shaft, Diamond vein, Leggitt's Creek Shaft, G or Big vein,	Fan,	20	5	86	10/10 1 3/100 1 3/100	. . .	4	242	109 820	66 350	109 460	do.	27	
Marvine Shaft, Diamond vein, Marvine Shaft, G or Big vein,	Fan,	20	5	80	75/100 75/100	. . .	3	44	45 020	44 400	45 120	do.	36	
No. 1 Shaft Carbondale, Bottom vein,	Fan,	17	4	75	1 15/100	. . .	6	148	125 810	127.900	132,460	do.	9	
No. 3 Shaft Carbondale, Bottom and Top vein, White Bridge Tunnel, Bottom and Top vein,	Fan,	17	4	97	1 1	. . .	1	23	10 210	9 660	10.980	do.	29	
Powderly Slope, Top vein, Powderly Slope, Bottom vein,	Fan,	17	4	61	9/10 9/10	. . .	5	246	77.050	68 370	81 100	do.	4	
Von Storch Slope, Diamond vein, Von Storch Slope, G or Big vein,	Fan,	20	5	85	75/100 75/100	. . .	2	81	26 740	23 460	37.240	do.	32	
Von Storch Shaft, Clark vein,	Fan,	17	5	100	1 15/100	. . .	3	104	30.120	5.950	21.350	do.	8	
White Oak Slope, Archbald vein,	Fan,	17	4	58	75/100	. .	3	134	39 080	35 720	53,180	do.	7	
White Oak Drift, Archbald vein,	Furnace,	. .				64	2	91	36 772	24 126	32,522	do.	17	
Shaft No. 1 Dunmore, Dunmore vein,	Fan,	17½	5	25	. . .		2	117	29 983	27.210	37 472	do.	9	
Shaft No. 2 Dunmore, Dunmore Top vein,	Furnace,	. .	. .	. .	. . .	27	2	88	31.300	27 600	36,100	do.	16	
Shaft No. 2 Dunmore, Dunmore Bottom vein,	Furnace,	. .	. .	. .	. .	27	2	106	43 800	37.200	50 100	do.	14	
Shaft No. 3 Gypsy Grove, Dunmore Top vein, Shaft No. 3 Gypsy Grove, D'more, Middle vein, Shaft No. 4 Gypsy Grove, D'more, Bottom vein,	Fan,	17½	5	70	. . . . .	. .	5	240	82 660	67,340	120 600	do.	14	
Shaft No. 5 Dunmore, "3" Dunmore veins,	Fan,	17½	5	75	. .	. .	1	62	18,200	17 583	18,643	do.	34	
Bridge Shaft, Clark and New County veins,	Fan,	21	5½	56	. . .	. .	1	58	14 333	13,893	14,633	do.	13	
Belmont Tunnels, Carbondale Bottom vein,	Fan,	6	3	175	. .	. .	2	132	36,916	36.066	37,763	do.	6	
Capouse Shaft, Roek and Big veins,	2 fans,	18 20	5 5	90 80	7/10 8/10	. .	7	192	79,000	70.000	80,000	do.	18	
Dolph Tunnel,	Fan,	15	4	60	. . .	. .	4	140	102,114	92,721	104.300	do.	20	
							3	98	29,420	25 700	35,200	do.	30	
							7	428	131,200	125 760	143,100	do.	11	
							3	153	36,420	30 230	36,630	do.	71	
													18	

Eaton Tunnel, Archbald vein,	Fan,	15	3 7/8	70		4	227	92 100	89, 100	93,150	do.	22	
Eaton Shaft, Archbald vein,	Fan,	12	3 7/8	70		1	20	17, 800	17, 000	17, 940	do.	2	
Edgerton Tunnel, Archbald vein,	2 furnaces,				200	3	232	71, 240	42, 000	72, 300	do.	20	
Erie Shaft, Archbald vein,	Fan,	17 1/2	4	58	3/16	5	330	75, 750	65, 490	78 640	do.	38	
Fair Lawn Slope, Dunmore No. 1, 2, and 3 vein,	Disc fan,	5	2	450		3	115	46 755	39, 670	53, 915	do.	10	
Filer's Slope,	Fan,	15	4 1/2	150		2	143	29, 866	27, 825	34 843	do.	15	
Forest City Slope,	Fan,	12	4	120	1/16	2	144	53, 630	28, 140	97, 620	do.	9	
Forest City Shaft No. 2,	Fan,	18	5	50	1/16	2	114	57, 855	41, 039	71 020	do.	11	
Grassey Island Shaft,	Fan,	12	3 3/4	60		3	168	39, 240	19 670	44 426	do.	11	
Grassey Island Tunnel,	Double furnace,				72	1	60	18, 460	11, 540	20, 220	do.	6	
Green Ridge Slope,	Fan,	12	3 1/2	98		5	286	59, 521	43, 155	60, 185	do.	16	
Jermyn No. 4,	Fan,	20	5	63	1 5/16	6	339	111, 070	87, 361	112, 135	do.	39	
Keystone Tunnel,	2 furnaces,				96	3	224	50, 380	46, 635	52, 765	do.	26	
Lackawanna Shaft,	Fan,	20	5	55		4	238	86, 840	49 320	89, 780	do.	33	
Meadow Brook Shaft,	Fan,	14	3 1/2	120	1/16	5	228	68, 660	61, 680	70, 920	do.	35	
Meadow Brook Tunnel,	2 furnaces,				112	2	75	38, 360	34, 500	43, 170	do.	16	
Mount Pleasant Slope,	Fan,	14	4	104	1	4	224	61, 920	61, 520	63 880	do.	34	
National Shaft and Slope,	Fan,	14	3 3/4	120	1/16	5	143	71, 100	64, 032	72 160	do.	21	
Pine Brook Shaft,	Double fan,	17 1/2	4	60	1 3/16	6	346	111, 000	94, 800	142, 540	do.	35	
Pierce Slope and Tunnel, Archbald vein,	2 fans,	12	4	70		3	220	90, 145	46, 621	103, 160	do.	20	
		12	3	60									
Pancoast Shaft,	Fan,	20	5	60		7	342	96, 152	92 010	112, 230	do.	44	
Richmond Shaft,	Fan,	10	3 1/4	115		2	51	17, 500	12, 500	18, 000	do.	10	
Stafford Shaft,	Fan,	9	3	120	1/16	2	33	31, 950	23, 008	33, 792	do.	3	
S. V. White Tunnel,	Furnace,				40	2	150	19, 800	7, 850	32 140	do.	10	
Spencer Shaft,	Fan,	14	5	95		4	194	37, 280	37, 560	38, 160	do.	17	
Simpson Slope,	Fan,	16	5	70		2	169	59, 040	58, 810	59, 360	do.	17	
Watkin's Slope and Tunnel,	Furnace,				36	1	49	19, 000	14, 170	20, 700	do.	6	

NOTE.—There are 67 fans and 13 furnaces.

SECOND ANTHRACITE DISTRICT.

Office of Inspector of Mines,
Pittston, Pa., *March 8, 1888.*

Hon. Thomas J. Stewart,
Secretary of Internal Affairs:

Sir: I have the honor of presenting herewith my annual report for the year 1887.

The report contains the usual tables showing the number of accidents, fatal and non-fatal, arising from various causes during the year of 1887, which, I am sorry to report, is considerable in excess of those the year previous.

The report shows that the production of coal during the year was 5,043,516 tons, an increase over the production of 1886 equal to 810,060 tons. The number of fatal accidents was 52, leaving 21 widows and 69 orphans, an increase of 19 fatal accidents, 5 widows and 22 orphans as compared with those of 1886.

The number of non-fatal accidents was 146, of which a large number were of such a slight character that the parties were only off work for a day or two.

Respectfully yours,

H. McDonald,
Inspector of Mines.

The Total Amount of Coal Mined during the Year 1887.

Pennsylvania Coal Company,	1,214,986.00
Delaware and Hudson Canal Company,	434,954.19
Lehigh Valley Coal Company,	861,644.10
Delaware, Lackawanna and Western Railroad Company,	274,308.01
Miscellaneous coal companies,	2,257,623.05
Total of all companies,	5,043,516.15

Number of Fatal Accidents and Amount of Coal Produced per Life Lost.

NAMES OF COMPANIES.	Number of lives lost.	Coal mined per life lost.
Pennsylvania Coal Company,	10	121,498
Delaware and Hudson Canal Company,	5	86,990
Lehigh Valley Coal Company,	8	107,705
Delaware, Laekawanna and Western Railroad Company,	2	137,154
Miscellaneous coal companies,	27	83,615
Total of all coal companies,	52	96,590

Number of widows, 21; orphans, 69.

Number of Fatal and Serious Accidents and Amount of Coal Produced per Each Person Injured.

NAMES OF COMPANIES.	Killed or injured.	Tons coal mined per person killed or injured.
Pennsylvaniania Coal Company,	24	50,624
Delaware and Hudson Canal Company,	11	39,541
Lehigh Valley Coal Company,	47	18,332
Delaware, Lackawanna and Western Railroad Company,	17	16,135
Miscellaneous coal companies,	99	22,804
Total, all companies,	198	25,477

Classification of Fatal and Non-fatal Accidents.

CAUSE OF ACCIDENTS.	Killed.	Seriously injured.
By explosions of carbureted hydrogen gas,	2	13
By falling down shafts,	6	. . . .
By falls of roof and coal,	24	48
By cars under ground,	12	30
By explosions of powder and blasts,	4	19
Miscellaneous causes inside,	1	20
Miseellaneous eauses outside,	3	16
Total,	52	146

Examination of Applicants for Mine Foreman's Certificates.

As provided in article eighth of the act of June 30, 1885, the examiners were H. McDonald, Inspector Second District, Pittston, Pa.; A. Bryden, superintendent, Pittston, Pa., and Thomas Langan, miner, Pleasant Valley, Pa. The examination of applicants for certificates of qualification was held in Pittston, Pa., June 21, 1887.

The following names were recommended for certificates of qualification:

Andrew H. Allen, ... Pittston, Luzerne county.
W. G. Thomas, ... Scranton, Lackawanna county.
Howell J. Brooks, ... Scranton, Lackawanna county.
Robert Martin, ... Plains, Luzerne county.
David Alexander, ... Pittston, Luzerne county.
Isaac E. James, ... Pittston, Luzerne county.
Thomas G. Thomas, ... Scranton, Lackawanna county.
Thomas P. Langan, ... Duryea, Luzerne county.
James Allen, ... Avoca, Luzerne county.
John Meade, ... Avoca, Luzerne county.
James Harding, ... Pittston, Luzerne county.
Bernard Hallerin, ... Pittston, Luzerne county.
Archibald McQueen, ... Avoca, Luzerne county.
James Thompson, ... Pittston, Luzerne county.
John F. Evans, ... Parsons, Luzerne county.
Adam John, ... Pittston, Luzerne county.
David J. Morgan, ... Wilkes-Barre, Luzerne county.
Peter Farrell, ... Avoca, Luzerne county.
S. P. Williams, ... Pittston, Luzerne county.
Daniel Dooris, ... Pittston, Luzerne county.

The following names were recommended for certificates of service:

Alexander Bryden, ... Pittston, Luzerne county.
A. G. Mason, ... Pittston, Luzerne county.

A Brief Review of Fatal Accidents.

During the year 1887, I am sorry to have to report an increase of fatal and non-fatal accidents in this district, an increase over 1886, of 19 fatal and 50 non-fatal accidents. By examining tables 4 and 5, it will be clearly seen that a large number of accidents could have been avoided by ordinary care on the part of the victims themselves. While a great number I must say are caused by inexperienced workmen not knowing (and here let me say not taking the pains to know) when they are in danger. Accidents will occur in and around the mines with the best care that can be taken by all concerned in the mining of coal. Therefore it behooves every man and boy that works in, or around the mines, to be on the alert to guard against danger and accidents to himself or his fellow workman. It is my earnest desire

to see that time arrive when every workingman will exert that care for self preservation which is his duty to himself and family likewise to his fellow workmen in helping to reduce the accidents which are so large in the mining and preparing of coal.

Prosecutions for Violation of the Mine Law in 1887.

Lewis Leppard, slate picker, ten (10) years of age, employed in the Florence Coal Company Elmwood breaker, located in Pittston township, Luzerne county, was instantly killed by falling on a revolving screen. I immediately brought suit against George Kiefer, outside foreman, and John Leppard, the father of the boy, for violation of the mine laws. The outside foreman for employing the boy without receiving a certificate of age from the parents. The father for falsely telling the foreman that his boy Lewis was of the required legal age. The case was tried before the Honorable Judge Woodward, of Luzerne county. The parties pleaded guilty to the charges.

Joseph Hornsby, shaft sinker, employed in Nelson Cowan's Schooley Shaft, located in Exeter borough, Luzerne county, was instantly killed by falling down the shaft. He was putting on guides in the shaft to conduct the carriage, and while standing on a plank driving a spike into one end of guide, he missed his blow, causing him to loose his balance and falling down to the bottom of the shaft, a distance of five hundred feet. I brought suit against Richard Appbly, assistant mine boss in charge, and Thomas Dougherty, charge man of the shift, for violation of the fourth clause, section 22, of Article 4, of the mine law. The case was tried before the Honorable C. E. Rice, President Judge of Luzerne county. The parties pleaded guilty to the charge.

TABLE No. 1.—Showing Location of Colleries in the Second Anthracite Mine District.

Name of Colliery.	Name of Operator.	Location—County.	Name of Superintendent.	Post-Office Address.
Barnum Shaft No. 1,	Pennsylvania Coal Company,	Marcy twp., Luzerne co.,	A. Bryden, asst. Alex. Bryden,	Pittston Luzerne county.
Barnum Shaft No. 2,	do. do.	do. do.	do. do.	do. do.
Laws Shaft,	do. do.	Pittston twp , Luzerne co.,	Wm. Law, asst. John Law,	do, do.
Shaft No. 13,	do. do.	Old Forge twp., Lacka. co.,	do. do.	do. do.
Old Forge Shaft,	do. do.	do. do.	do. do.	do. do.
Shaft No. 9,	do. do.	Hughestown bor., Luzerne co,,	A. Bryden, asst. Alex. Bryden,	do. do.
Shaft No. 10,	do. do.	do. do.	do. do.	do. do.
Shaft No. 10, Jr.,	do. do.	do. do.	do. do.	do. do.
Abbott's Slope,	do. do.	do. do.	do. do.	do. do.
Shaft No. 1,	do. do.	do. do.	do. do.	do. do.
Shaft No. 8,	do. do.	do. do.	do. do.	do. do.
Slope No. 4,	do. do.	Jenkins twp., Luzerne co.,	do. do.	do. do.
Shaft No. 7,	do. do.	do. do.	Wm. Law, asst. John Law,	do. do.
Shaft No. 5,	do. do.	do. do.	do. do.	do. do.
Shaft No. 6,	do. do.	do. do.	do. do.	do. do.
Shaft No. 11,	do. do.	do. do.	do, do.	do. do.
Shaft and Slope No. 14,	do. do.	do. do.	do. do.	do. do.
Hoyte Shaft,	do. do.	do. do.	do. do.	do. do.
Mill Creek Shaft and slope,	Del. & Hudson Canal Co.,	Plains twp., Luzerne co.,	A. H. Vandling, asst. C. H. Scharer,	Scranton, Lacka. county.
Pine Ridge Shaft,	do. do.	Miner's Mills bor., Luzerne co.,	do. do.	do. do.
Laurel Run Slope,	do. do.	Parsons bor., Luzerne co.,	do. do.	do. do.
Prospect Shaft,	Lehigh Valley Coal Company,	Plains twp., Luzerne co.,	Fred. Mercur, Wm. Samuels, gen. inside foreman,	Wilkes-Barre, Luzerne co.
Oakwood Shaft,	do. do.	do. do.	Fred. Mercur, Wm. Samuels, gen. inside foreman,	do. do.
Wyoming Shaft,	do. do.	do. do.	Fred. Mercur, asst. Wm. Lyons,	do. do.
Henry Shaft,	do. do.	do. do.	do. do.	do. do.
Mineral Spring Slope,	do. do.	Parsons bor., Luzerne co.,	Fred. Mercur,	do. do.
Coal Brook Slope,	do. do.	Plains township, Luzerne co.,	do. do.	do. do.
Exeter Shaft,	do. do.	Exeter bor., Luzerne co.,	Fred. Mercur, asst. A. G. Mason,	do. do.
Heidelburg Shaft,	do. do.	Pittston twp., Luzerne co.,	do. do.	do. do.
Ontario Slope,	do. do.	do. do.	do. do.	do. do.
Maltby Shaft,	do. do.	Wyoming twp., Luzerne co.,	Fred. Mercur,	do. do.
Midvale Slope,	do. do.	Plains twp., Luzerne co.,	do. do.	do. do.
Pettibone Shaft,	Del. Laeka. & West. R. R. Co.,	Kingston twp., Luzerne co.,	W. R. Storrs, B. Hugher, gen. inside foreman,	Scranton, Lacka. county.
Hunt Shaft,	do. do.	Wyoming twp., Luzerne co.,	W. R. Storrs, B. Hugher, gen. inside foreman,	do. do.
Hallstead Shaft,	do. do.	Marcy twp., Luzerne co.,	W. R. Storrs, B. Hugber, gen. inside foreman,	do. do.
Butler Slope and Shaft,	S. B. Bennett,	Pittston twp., Luzerne co.,	S. B. Bennett,	Pittston, Luzerne county.
Mosier Slope and Shaft,	Butler Coal Company,	Hugbestown bor., Luzerne co.,	F. C. Deninney,	do. do.
Twin Shaft,	do. do.	Pittston bor., Luzerne co.,	do. do.	do. do.
Forty Fort Shaft,	Wyoming Valley Coal Co.,	Kingston twp., Luzerne co.,	J. H. Swoyer, Wm. McCullough, gen. inside foreman,	Wilkes-Barre, Luzerne co.
Harry E., Shaft and Slope,	do. do.	do. do.	J. H. Swoyer, Wm. McCullough, gen. inside foreman,	do. do.

TABLE No 1.—Continued.

NAME OF COLLIERY.	NAME OF OPERATOR.	LOCATION—COUNTY.	NAME OF SUPERINTENDENT.	POST-OFFICE ADDRESS.
Boston Slope and Drift,	Nelson Cowan,	Jenkins twp., Luzerne co.,	Nelson Cowan,	Pittston, Luzerne county.
Schooley Shaft,	do. do.	Exeter bor., Luzerne co.,	do. do.	do. do.
Bernice Drift,	State Line & Sullivan R. R. Co.,	Bernice, Sullivan co.,	J. O. Blight, asst. C. R. Claghorne,	Towanda, Bradford county.
Bennett Shaft,	Waddell and Walters,	Plains twp , Luzerne co.,	James Waddell,	Kingston, Luzerne county.
Mill Hollow Shaft,	Thomas Waddell,	Luzerne bor., Luzerne co.,	do. do.	do. do.
Black Diamond Shaft,	John C. Haddock,	Kingston twp,, Luzerne co.,	James B. Davis,	Plymouth, Luzerne county.
Clear Spring Shaft,	Clear Spring Coal Co.,	West Pittston bor., Luzerne co.,	J. L. Cake,	Pittstyn, Luzerne county.
Consolidated Shaft and Slope,	Hillside Coal & Iron Co.,	Pleasant Valley bor., Luzerne co.,	W. A. May,	Scranton, Lacka. county.
Dunn Shaft,	Penna. Anthracite Coal Co.,	Old Forge twp., Lacka. co.,	John Jernyn,	do, do.
Sibley Shaft,	Elliott, McClure & Co.,	do. do.	James C. McClure,	do. do.
Greenwood Shaft,	Penna. Anthracite Coal Co.,	Lacka. twp. Lacka. co.,	W. G. Thomas,	do. do.
Elmwood Shaft,	Florance Coal Co.,	Pittston twp., Luzerne co.,	Austin Moore,	Avoca, Luzerne county.
Enterprise Shaft and Slope,	A. Langdon,	Plains twp., Luzerne co.,	C. D. Simpson,	Scranton, Lacka. county.
East Boston Shaft,	W. G. Payne & Co.,	Kingston twp., Luzerne co.,	E. F. Payne,	Kingston, Luzerne county.
Fairmount Shaft,	H. W. Harris & Co.,	Pittston twp.. Luzerne co.,	H. W. Harris,	Pittston, Luzerne county.
Hillman Slope,	H. Baker Hillman,	Plains twp., Luzerne co.,	H. B. Hillman,	Wilkes-Barre, Luzerne co.
Keystone Slope and Drift,	Keystone Coal Co.,	do. do.	David Evans,	Pittston, Luzerne county.
Columbia Shaft and Tunnel,	Old Forge Coal Co., Limited.	Marcy twp., Luzerne co.,	John A. Mears,	Scranton, Lacka. county.
Katy Did Tunnel,	John M. Robertson,	Moosic, Lacka. co.,	John M. Robertson,	Moosic, Lacka. county.

TABLE No. 2.—Gives the total number of tons of coal mined in each colliery, number of days worked, number of employés, number of persons killed and injured, number of kegs of powder used, &c., in the Second Anthracite Mine District for the year ending December 31, 1887.

Names of Collieries.	Location.	Total production in tons of coal.	Total shipment in tons of coal.	No. days worked.	No. persons employed.	No. fatal accidents.	No. non-fatal accidents.	No. kegs powder used.	No. steam boilers.	No. horses and mules.	No. mine locomotives.
Pennsylvania Coal Company:											
Barnum, two shafts,	Marcy township, Luzerne co.,	189,667.00	189,067 00	215	474	2	1	7,081	19	58	...
Central Breaker. Laws Shaft,	Pittston township, Luzerne co.,	86,643.00	86,643.00	222	246	...	1	7,081	16	27	...
Central Breaker. Shaft No. 13,	Old Forge twp., Lackawanna co.,	85.052.00	85,052 00	222	183	..	.	2.564	10	30	...
Old Forge, two shafts,	do. do.	160,241 00	160 241.00	228½	332	1	2	5.612	13	32	...
No. 10 Breaker. Shaft No. 9,	Hughestown bor., Luzerne co.,	78,910.00	78.910 00	207¾	153	...	...	2.492	7	21	...
No. 10 Breaker. Shaft No. 10, 10 Jr., & Abbott's Slope,	do. do.	109.933.00	109.933.00	217½	341	..	...	4,388	14	43	..
Owen Breaker. Shaft No. 1,	do. do.	62.877.00	62,877.00	260¼	131	1	...	2,232	5	16	..
Owen Breaker. Shaft No. 8,	do. do.	62,148.00	62,148.00	260¼	234	...	..	2.090	10	16	...
Owen Breaker. Slope No. 4,	Jenkins township, Luzerne co.,	72 609.00	72.609.00	251½	153	4	1	1,905	6	31	...
Owen Breaker. Shaft No. 7,	do. do.	92,376.00	92.376.00	260½	162	..	1	1,867	12	23	...
No. 6 Breaker. Shaft No. 5,	do. do.	56.801 00	56,801.00	218	130	1	1	1 602	9	21	.
No. 6 Breaker. Shaft No. 6,	do. do.	56,241.00	56,241.00	218	231	...	...	1,727	9	23	...
No. 6 Breaker. Shaft No. 11,	do. do.	26,684.00	26.684.00	218	63	...	..	536	3	17	...
Shaft and Slope No. 14,	do. do.	75,404.00	75,404.00	111	363	...	4	2,764	16	39	..
Total, Pennsylvania Coal Company,		1,214,986.00	1,214,986 00	3,110¼	3,196	9	11	43,941	149	397	..
Delaware and Hudson Canal Company:											
Mill Creek Shaft and Slope,	Plains township, Luzerne co.,	102,814 02	102.814.02	209½	238	2	4	2,072	23	32	...
Pine Ridge Shaft,	Miners' Mills bor., Luzerne co.,	202.016.16	198,590 12	250½	468	2	2	5,391	21	53	...
Laurel Run Slope,	Parsons borough, Luzerne co.,	130,125.01	130.125 01	230¼	352	1	...	3,595	12	53	..
Total, Delaware and Hudson Canal Co.,		434 954 19	431,529.15	690	1,058	5	6	11,058	56	138	...

Pennsylvania Coal Company.—The coal used to generate steam is included in the above. One fatal and 3 non-fatal accidents in sinking shaft not included in the above.
Delaware and Hudson Canal Company.—The coal consumed to generate steam is not included in the above.

TABLE No. 2—Continued.

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Total shipment in tons of coal.	No. days worked.	No. persons employed.	No. fatal accidents.	No. non-fatal accidents.	No. kegs powder used.	No. steam boilers.	No. horses and mules.	No. mine locomotives.
Lehigh Valley Coal Company:											
Prospect, two shafts,	Plains township, Luzerne co.,	317,853.03	317,706.13	223½	635	3	23	7 905	34	85	3
Wyoming Shaft,	do. do.	143 187.03	135,187.03	178½	318	2	8	5,150	18	58	. .
Henry Shaft,	do. do.	186,258.14	175,817 14	207¾	408	1	6	5,457	18	66	. .
Mineral Spring, two slopes,	Parsons borough, Luzerne co.,	90,306.07	84,536 07	202¼	217	2	2	2,800	12	26	1
Exeter Shaft,	Exeter borough, Luzerne co.,	10,032.10	9,968.00	36	209	. . .	. . .	390	18	23	1
Heidelberg Shaft and Slope,	Pittston township, Luzerne co.,	114,006.13	113,785.13	202	310	. . .	. . .	3,585	17	85	1
Total, Lehigh Valley Coal Company,		861,644 10	837,001.10	1,049¾	2 097	8	39	25,287	117	298	6
Del., Lacka. & Western R. R. Co.:											
*Pettibone Shaft,	Kingston township, Luzerne co.,	. . . . .	. . . . .	. . . . .	90	. . .	. .	. .	. .	. . .	. . .
Hunt Shaft.	Wyoming, Luzerne co.,	59,150 19	52,811.19	209¾	236	. . .	7	2,876	12	36	. .
Halistead Shaft,	Marcy township, Luzerne co.,	215 157.02	203,583.02	210¾	493	2	8	6,847	15	61	. .
Total, Del., Lacka. & Western R. R. Co.,		274,308.01	256,395.01	420	819	2	15	9,723	27	97	.
Miscellaneous coal companies:											
Butler Shaft and Slope,	Pittston township, Luzerne co.,	30 150.00	29,000 00	215	125	. . .	2	1 850	7	8	. . .
Mosler Shaft and Slope,	Hughestown bor., Luzerne co.,	98,130 05	95 837.13	222	247	. .	3	3 009	12	22	. . .
Twin Shaft,	Pittston borough, Luzerne co.,	51.129.05	47,615 04	169½	165	4	6	2.363	10	22	. .
Forty Fort Shaft,	Kingston township, Luzerne co.,	110,750.00	100,600 00	253¼	276	1	4	5.412	13	34	. . .
Harry E. Shaft and Slope,	do. do.	140 850.00	128,700 00	249	394	1	2	6 920	16	45	. . .
Boston Slope and Drift,	Jenkins township, Luzerne co.,	43,232.00	40 518 60	180	163	. .	1	1,838	7	25	. . .
Schooley Shaft,	Exeter borough, Luzerne co.,	103,138 00	96 203.00	209	272	4	6	3,455	21	51	. . .
Bernice Drift,	Bernice, Sullivan co.,	92,679 07	90,018.08	273½	249	. . .	1	1,292	2	41	. .
Bennett Shaft,	Plains township, Luzerne co.,	112,362.06	107,823.06	234	237	.	2	4,139	10	22	. . .
Mill Hollow Shaft,	Luzerne borough, Luzerne co ,	62 913.00	57 750.00	215¾	213	2	7	1,960	14	14	. . .
Black Diamond Shaft,	Kingston township, Luzerne co.,	135,450 00	120,448.00	176	304	2	9	5 600	19	32	. . .
Clear Spring Shaft,	West Pittston bor., Luzerne co.,	159,425.13	149,170.16	191¾	367	2	. . .	4,557	14	51	. . .

Consolidated Shaft and Slope,	Pleasant Valley bor., Luzerne co.,	118,823.03	117,911.18	189½	376	1	2	4,215	11	43	1
Dunn Shaft,	Old Forge twp., Lackawanna co.,	79,828 00	74,467 00	111	359	. . .	1	3,048	12	42	. .
Sibley Shaft,	do. do.	132,875.00	122,960.00	224¾	276	1	2	5,178	13	34	. .
Greenwood Shaft and Slope,	Lackawanna twp., Lacka. co., . .	103.386.05	101,960.05	150½	412	1	1	4 241	19	48	1
Elmwood Shaft,	Pittston township, Luzerne co., .	169,023.19	161,637.04	274¾	392	1	1	5,510	10	34	. . .
Enterprise Shaft and Slope,	Plains township, Luzerne co., . .	112,417.12	106,125.17	222	311	1	5	3 369	14	50	. . .
East Boston Shaft,	Kingston township, Luzerne co.,	154,124.06	152.091 14	234¾	358	3	14	4 969	18	29	. . .
Fairmount Shaft,	Pittston township, Luzerne co., .	7 877 04	7,396.02	50	178	. . .	1	547	6	12	. . .
Fairmount Shaft,†	do. do.	17,700.00	16.500 00	. . . .	. . . .	. .	. .	1,240	. .	. . .	. . .
Hillman Slope,	Plains township, Luzerne co., . .	60,000.00	60,000.00	274	102	1	. .	2.240	8	15	. . .
Keystone Slope and Tunnel,	do. do. . .	89,786.06	89.599.11	258¾	250	1	2	3.575	6	20	. . .
Columbia Shaft and Tunnel,	Marcy township, Luzerne co., . .	58,539.14	56,942 05	165	257	1	. .	1 941	8	27	. . .
Katy Did Tunnel,	Moosic, Lackawanna county, . .	13,032.00	11,459.00	167½	57	. .	. .	464	1	10	. .
Total, miscellaneous coal companies,		2,257,623.05	2,142,615.03	4,912	6,250	27	72	82,912	271	731	2

RECAPITULATION.

Pennsylvania Coal Company,	1 214 986.00	1,214.986.00	3,110¼	3,196	10	14	43,941	149	397	. . .
Delaware and Hudson Canal Company,	434 954.19	431 529.15	690	1,058	5	6	11,058	56	138	. .
Lehigh Valley Coal Company,	861,644.10	837 001.10	1,049¾	2,097	8	39	25.287	117	298	6
Delaware, Lackawanna and Western Railroad Company,	274.308.01	256.395.01	420	819	2	15	9.723	27	97	.
Miscellaneous coal companies,	2,257 623 05	2,142,615 03	4 912	6,250	27	72	82,912	271	731	2
Total, all companies,	5,043,516.15	4,882,527.09	10,182	13,420	52	146	172,921	620	1,661	8

Lehigh Valley Coal Company.--22,110 tons of the above was consumed to generate steam at the mines.
Delaware, Lackawanna and Western Railroad Company.--13,260 tons of the above was consumed to generate steam at the mines.
Miscellaneous coal companies.--60,227 tons included in the above was consumed to generate steam at the mines.
Recapitulation.—95,597 tons of marketable coal used to generate steam at the mines is included in this table. There were 177 persons employed in sinking shafts not included in the above table, adding which makes a total number of 13,597 persons employed in and about the mines at the close of 1887.

* Did not ship any coal in 1887. † Coal shipped by J. Rice before selling out to H. W. Harris & Co.

TABLE No. 3—Showing the number of each class of employés at each colliery in the Second Anthracite Mine District during the year 1887

NAMES OF COLLIERIES.	LOCATION.	NUMBER PERSONS EMPLOYED INSIDE.							NUMBER PERSONS EMPLOYED OUTSIDE.								GRAND TOTALS—INSIDE AND OUTSIDE.
		Inside foreman or mine boss.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Deorboys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All company men.	Superintendent, bookkeepers and clerks.	Total outside.		
Pennsylvania Coal Company.																	
Barnum, 2 shafts,	Marcy township, Luzerne county,	2	127	118	27	51	21	346	1	5	11	69	37	5	128		474
Law's Shafts,	Pittston township, Luzerne county,	1	54	56	13	18	9	151	1	2	10	54	26	2	95		246
Shaft No. 13,	Old Forge, Lackawanna county,	2	56	62	18	19	7	164	1	2	4	3	9	. .	19		183
Old Forge Shaft,	do do. do.	2	84	84	19	23	15	227	1	3	9	53	37	2	105		332
Shaft No. 9,	Hughestown borough, Luzerne co.,	1	52	52	10	19	5	139	. .	1	4	3	6	.	14		153
Shafts No. 10, 10 Jr. and Abbott Slope,	do. do. do.	2	81	78	19	35	8	223	2	3	7	39	64	3	118		341
Shaft No. 1,	do. do. do.	1	44	44	6	13	2	110	1	2	2	1	13	2	21		131
Shaft No. 8,	do. do. do.	. .	42	42	8	13	2	107	1	3	4	72	42	5	127		234
Slope No. 4,	Jenkins township, Luzerne county,	1	46	46	9	20	5	127	1	2	4	7	11	1	26		153
Shaft No. 7,	do. do. do.	1	48	48	20	19	6	142	1	1	4	2	11	1	20		162
Shaft No. 5,	do. do. do.	1	42	42	10	16	5	116	. .	2	3	2	6	1	14		130
Shaft No. 6,	do. do. do.	1	42	42	13	16	2	116	2	2	5	82	23	1	115		231
Shaft No. 11,	do. do. do.	.	20	20	4	13	1	58	. .	1	1	2	1		5		63
Shaft and Slope No. 14,	do. do. do.	2	89	84	27	30	6	238	1	3	8	58	53	2	125		363
Total Pennsylvania Coal Co.,		17	827	818	203	305	94	2,264	13	32	76	447	339	25	932		3,196
Hudson and Delaware Canal Co.																	
Mill Creek Shaft and Slope,	Plains township, Luzerne county,	1	44	44	19	24	. .	132	1	3	9	55	37	1	106		238
Pine Ridge Shaft,	Miners Mills borough, Luzerne co.,	1	85	85	39	60	16	286	1	6	15	120	33	2	182		468
Laurel Run Slope,	Parsons borough, Luzerne county,	1	64	64	23	46	11	209	1	5	6	89	41	1	143		352
Total Dela. Hudson Canal Co.,		3	193	193	81	130	27	627	3	14	30	264	116	4	431		1,058
Lehigh Valley Coal Company.																	
Prospect, 2 shafts,	Plains township, Luzerne county,	2	135	140	71	83	16	447	1	34	8	87	56	2	188		635
Wyoming Shafts,	do. do. do.	1	70	65	21	34	20	211	1	14	6	31	55	. . .	107		318

Henry Shafts,	do. do. do.	1	78	70	28	87	45	307	1	16	8	30	41	5	101	408
Mineral Spring Shaft and Slope,	Parsons borough, Luzerne county,	1	51	34	10	23	9	128	2	4	11	49	22	1	89	217
Exeter Shaft,	Exeter borough, Luzerne county,	1	35	35	33	18	7	129	1	5	9	42	21	2	80	209
Heidelberg Shaft and Slope,	Pittston township, Luzerne county,	1	60	58	25	26	8	178	1	5	5	39	80	2	132	310
Total Lehigh Valley Coal Co.,		7	427	402	188	271	105	1,400	7	78	47	278	275	12	697	2,097
Del., Lacka. & West. R. R. Co.																
*Pettebone Shaft,	Kingston township, Luzerne county,	1	. . .		18	. . .		19	1	4	12		54	.	71	90
Hallstead Shaft,	Marcy township, Luzerne county,	2	132	112	40	32	20	338	1	6	8	100	40	. .	155	493
Hunt Shaft,	Wyoming township, Luzerne co.,	1	62	50	12	23	3	151	1	4	6	39	31	4	85	236
Total Del., Lacka. & West.,		4	194	162	70	55	23	508	3	14	26	139	125	4	311	819
Miscellaneous Coal Companies.																
Butler Shaft and Slope,	Pittston township. Luzerne county,	1	30	30	6	8	2	77	1	6	5	22	12	2	48	125
Mosier Shaft and Slope,	Hughestown borough, Luzerne co.,	1	74	74	10	26	3	188	1	3	7	37	10	1	59	247
Twin Shaft,	Pittston borough, Luzerne county,	3	30	30	15	18	98	68	3	4	6	40	13	1	67	165
Forty Fort Shaft,	Kingston township, Luzerne county,	1	80	77	19	21	5	203	1	5	6	33	25	3	73	276
Harry E. Shaft and Slope,	do. do. do.	1	116	98	14	40	9	278	1	6	7	60	39	3	116	394
Boston Slope and Drift,	Jenkins township, Luzerne county,	1	50	4	20	15	6	96	1	2	3	35	25	1	67	163
Schooley Shaft,	Exeter borough, Luzerne county,	2	57	55	24	15	11	164	1	3	10	57	35	2	108	272
Bernice Drift,	Bernice, Sullivan county,	1	137		6	15	2	161	2	8	2	70	6		88	249
Bennett Shaft,	Plains township, Luzerne county,	1	51	51	21	19	6	149	1	4	4	58	18	3	84	237
Mill Hollow Shaft,	Luzerne borough, Luzerne county,	2	75	30	8	14	3	132	1	4	4	40	30	2	81	213
Black Diamond Shaft,	Kingston township, Luzerne county,	1	90	65	16	23	9	204	1	5	10	65	16	3	100	304
Clear Spring Shaft,	West Pittston borough, Luzerne co.,	1	85	85	29	45	28	273	1	4	8	50	28	3	94	367
Consolidated Shaft and Slope,	Pleasant Valley boro., Luzerne co.,	2	100	100	29	43	10	284	1	7	7	30	46	1	92	376
Dunn Shaft,	Old Forge twp., Lackawanna co.,	1	91	86	21	36	7	242	1	4	5	69	35	3	117	359
Sibley Shaft,	do. do. do.	2	75	50	17	35	6	185	1	4	6	57	21	2	91	276
Greenwood Shaft and Slope,	Lackawanna twp., Lackawanna co.,	1	100	75	37	45	26	284	1	5	10	60	50	2	128	412
Elmwood Shaft,	Pittston township, Luzerne county,	1	65	65	15	36	9	191	1	3	4	70	30	3	111	302
Enterprise Shaft and Slope,	Plains township, Luzerne county,	2	53	79	29	38	13	214	2	4	10	38	40	3	97	311
East Boston Shaft,	Kingston township, Luzerne county,	1	80	80	28	37	10	236	1	4	5	78	31	3	122	358
Fairmount Shaft,	Pittston township, Luzerne county,	2	54	46	10	14	3	129	1	3	3	28	14	. .	49	178
Hillman Slope,	Plains township, Luzerne county,	1	25	25	8	11	4	74	1	2	5	11	8	1	28	102
Keystone Slope and Drift,	do. do. do.	1	63	71	12	23	4	174	1	4	5	35	28	3	76	250
Columbia Shaft and Tunnel,	Marcy township, Luzerne county,	1	60	60	15	18	6	160	1	5	6	45	40	. .	97	257
Katy Old Tunnel,	Moosic Lackawanna county,	1	15	15	2	2	1	36	1	1	1	10	7	1	21	57
Total Miscellaneous Coal Cos.,		32	1,656	1,351	411	597	185	4,232	28	100	139	1,098	607	46	2,018	6,250

* Did not ship any coal in 1887.

TABLE 3.—Recapitulation.

NAMES OF COLLIERIES.	NUMBER OF PERSONS EMPLOYED INSIDE.							NUMBER OF PERSONS EMPLOYED OUTSIDE.							GRAND TOTALS—INSIDE AND OUTSIDE.
	Inside foreman or mine boss.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Doorboys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All company men.	Superintendents, bookkeepers and clerks.	Total outside.	
Pennsylvania Coal Company,	17	827	818	203	305	94	2,204	13	32	76	447	339	25	932	3 196
Delaware and Hudson Canal Company,	3	193	193	81	130	27	627	3	14	30	264	116	4	431	1,058
Lehigh Valley Coal Company,	7	427	402	188	271	105	1,400	7	78	47	278	275	12	697	2,097
Delaware, Lackawanna and Western Railroad Company,	4	194	162	70	55	23	508	3	14	26	139	125	4	311	819
Miscellaneous Coal Companies,	32	1,656	1,351	411	597	185	4,232	23	100	139	1,098	607	46	2,018	6,250
Total all companies,	63	3,297	2,926	953	1,358	434	9,031	54	238	318	2,226	1,462	91	4,389	13,420

N. B.—In addition to the above there were 82 employed sinking at the Hoyt Shaft and 95 at the Seneca Shaft, adding which would make a total of 13,597 persons.

TABLE No. 4.—List of fatal accidents occurring in and about the Mines of the Second Anthracite Mine District, for the year ended December 31, 1887.

Date of accident.	No of accident.	Name of Person.	Occupation.	Age.	Widow.	No. of orphans.	Name of Colliery—Location, County.	Nature and Cause of Accident.
Jan. 12,	1	Michael Adams, . . .	Laborer, ...	22	. .	. .	Clear Spring Colliery, West Pittston, Luz. co., . .	Instantly killed while helping his miner to repair the road by a fall of rock from roof.
14,	2	Frank Branghan, . .	Driver, ...	16	. .	. .	Wyoming Colliery, Plains twp., Luz. co., ...	While riding on front of loaded car fell off was injured so severely that he died the next day.
16,	3	Anthony Nealon, . .	Pump man, ...	22		.	Greenwood Colliery, Lacka co., ...	Instantly killed by falling down the shaft.
Feb. 2,	4	Wm. Krueger, . . .	Miner, ...	7	1	1	Hallstead Colliery, Marcy twp., Luz. co., ...	Instantly killed by a premature blast.
3,	5	Michael Jersic, . . .	Laborer, ...	30	.	. .	Wyoming Colliery, Plains twp., Luz. co., ...	Was fatally injured by a fall of roof rock died the next day.
26,	6	James Stucker, . .	Miner, ...	28	1	1	Mineral Spring Colliery, Parson bor., Luz. co., . .	Was so seriously burned about the face that he died on March 3.
Mar. 4,	7	James McGrath, . .	Door boy, ...	15	. .	. .	Hallstead Colliery, Marcy twp., Luz. co., ...	Head caught between loaded cars, died four days after.
7,	8	Julus Keeler, ...	Laborer, ...	22	. .	. .	Black Diamond Colliery, Luz. bor., Luz. co., . . .	Seriously injured by a fall of top rock, died while on his way to the hospital.
8,	9	John Watson, ...	Driver, ...	17	. .	. .	Old Forge Penna. Coal Company, Lacka. co., . . .	Instantly killed, cars ran over him.
14,	10	Pierce Clark, ...	Laborer, ...	21	. .	. .	Keystone Colliery, Plains twp., Luz., co., ...	Instantly killed by a large piece of top coal falling on him.
21,	11	Andrew Marks, . . .	Miner, ...	35	1	1	Mineral Spring Colliery, Parsons bor., Luz. co., .	Seriously injured by a fall of top coal, died six hours after.
23,	12	Lewis Leppert, . . .	Slate picker, . . .	10	. .	. .	Elmwood Colliery, Pittston twp., Luz. co., ...	Instantly killed by falling on large screen while the same was revolving.
30,	13	Joseph Smith, ...	Laborer, ...	23		. .	Schooley Colliery, Exeter bor., Luz. co., ...	Instantly killed by a fall of rider coal.
Apr. 2,	14	Michael Lasa, ...	Laborer, . . .	44	1	. .	East Boston Colliery, Luz. bor., Luz. co., ...	Killed by a fall of slate.
16,	15	Andrew Hart, ...	Slatepicker, . . .	13	. .	. .	Consolidated Colliery, Pleasant Valley, Luz. co., .	Instantly killed by being caught in cog wheels of elevator.
19,	16	Harry Brown, ...	Driver, ...	18	. .	. .	Hillman Colliery, Plains twp., Luz. co., ...	Crushed to death by a car.
22,	17	John McGuire, . . .	Miner, ...	43	1	5	Schooley Colliery, Exeter bor., Luz. co., ...	Fatally injured by a fall of rock.
May 5,	18	James Munley, . . .	Miner, ...	43	1	7	Enterprise Colliery, Plains twp., Luz. co., ...	Killed by a fall of coal.
14,	19	James Walsh, . . .	Miner, ...	56	1	8	Schooley Colliery, Luzerne, ...	Killed by a fall of rock.
June 11,	20	Felix Jack, ...	Laborer, ...	40		4	East Boston Colliery, Luz. co., ...	Killed by a fall of slate.
14,	21	Peter Wimmers, . .	Laborer, ...	28	1	1	Mill Creek Colliery, Luz. co., ...	Both killed by a fall of top-rock.
14,	22	Simon Charnoski, . .	Laborer, ...	25	.		do. do.	
17,	23	Reese Thomas, . .	Miner, ...	30	1	3	Old Forge Coal Company, Limited, Luz. co., . . .	Killed by a fall of rock.
18,	24	Patrick Barrett, . .	Chargeman, . .	28	1	3	Twin Shaft, Luz. co., ...	Fatally burned by an explosion of fire-damp.
18,	25	Edward Mooney, . .	Sinker, ...	26	. .	. .	do. do.	

TABLE No. 4.—Continued.

Date of accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Widow.	No. of orphans.	Name of Colliery—Location, County.	Nature and Cause of Accident.
June 21,	26	Michael Hogan,	Miner,	55	1	6	Slope No. 4, Luzerne co.,	Both killed by a fall of rock.
21,	27	Michael Gilroy,	Laborer,	19	..	..	do. do.	
July 7,	28	Michael Davitt,	Driver,	15		.	Twin Shaft, Luz. co.,	Killed by a fall of rock.
18,	29	Webster Jenkins,	Track layer,	42	1	0	Harry E Slope, Luz. co.,	Fatally injured by a fall of rock.
26,	30	John Quinn,	Pin drawer,	15	..	..	Barnum Shaft, Luz. co.,	Killed by falling down a shaft.
Aug. 2,	31	John Mitchell,	Road cleaner,	55	1	1	Henry Shaft, Luz. co.,	Fatally injured by being crushed by a car.
12,	32	Francis Northof,	Slope footman,	24	..	.	Black Diamond, Luz. co.,	Killed by being run over by cars.
19,	33	Martin Hogan,	Slope footman,	22	..	.	Pine Ridge Shaft, Luz. co.,	Fatally injured by being caught between cars.
Sep. 2,	34	Joseph Hornsby,	Shaft sinker,	45		2	Schooley Shaft, Luz. co.,	Killed by falling down shaft.
10,	35	Wm. Watts,	Chargeman,	34	1	4	Hoyte Shaft, Luz. co.,	Killed by a premature blast.
16,	36	David Morgan,	Door boy,	16	..		Oakwood Shaft, Luz. co.,	Killed by being caught between a timber and car.
19,	37	Patrick Mayock,	Miner,	45	1	5	Laurel Run Slope, Luz. co.,	Killed by a fall of coal.
27,	38	Patrick McAniff,	Laborer,	25	.		Prospect Shaft, Luz. co.,	Killed by a fall of rock.
Oct. 18,	39	Patrick Joyce,	Miner,	55	..	..	Sibley Shaft, Lacka. co.,	Killed by a fall of coal.
24,	40	David Williams,	Driver,	16	.		No. 5 Shaft, Luz co.,	Killed by being run over by a car.
25,	41	John Patten,	Miner,	48	1	6	East Boston, Luz. co,,	Fatally injured by a premature blast.
26,	42	Lewis Langer,	Miner,	40	1	..	Twin Shaft, Luz. co.,	Killed by falling down a shaft.
Nov. 1,	43	Michael Boyle,	Driver,	18	..		Prospect, Plains twp., Luz. co.,	Killed by mine car.
3,	44	John Hogan,	Miner,	28	1	2	No. 4 Slope, Jenkins twp., Luz. co.,	Killed by fall of roof.
7,	45	Michael Mahalko,	Miner,	28	1	1	Forty Foft, Kingston twp., Luz. co,,	Fatally injured by fall of rock.
10,	46	Patrick McDonnell,	Driver,	16	..	..	No. 4 slope, Jenkins twp., Luz co.,	Fatally injured; kicked by mule.
26,	47	Patrick Carey,	Driver,	17		..	No. 1 Shaft, Hughestown bor., Luz. co.,	Instantly killed; run over by cars.
30,	48	Thomas Kearney,	Co. man,	55	1	1	Clear Spring, West Pittston bor., Luz. co.,	Instantly killed; run over by cars.
Dec. 10,	49	John Johns,	Driver,	20	.	..	Mill Hollow Shaft, Luz. co.,	Both killed by falling down a shaft.
10,	50	Thos. Mulligan, jr.,	Laborer,	19	.		do. do.	
16,	51	Thos. Bartlett,	Miner,	32	1	1	Barnum Shaft, Luz. co.,	Killed by a fall of coal.
21,	52	George Spence,	Driver,	16	..	..	Pine Ridge Shaft, Luz.co.,	Killed by being crushed by a car.

TABLE No. 5.—List of non-fatal accidents occurring in and about the mines of the Second Anthracite Mine District for the year ended December 31, 1887.

Date of accident.	No. of accident.	Name of Person.	Occupation.	Age.	Married,	No. of children.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Jan. 5	1	Joseph Gregory, . .	Driver, ...	19	. .	. .	Forty Fort Shaft, . . .	Kingston twp., Luzerne co.,	Leg fractured by falling under loaded car while in motion.
7	2	George Martin, . .	Laborer, ...	33	1	2	Prospect Shaft.	Plains twp., Luzerne co., .	Leg slightly bruised by empty cars.
10	3	Simon Gooalis, . . .	do.	25	. .	. .	Black Diamond Shaft,	Kingston twp., Luzerne co.,	Hand seriously bruised by car wheel going over it
13	4	John Storse, . . .	do.	26	1	4	Hallstead Shaft, . . .	Marcy twp., Luzerne co., . .	Slightly injured by a blast.
13	5	Michael Clifford, .	Driver, ...	21	. .		Shaft No. 1, Pa. C. Co.,	Old Forge twp., Lacka. co.,	Kicked in the abdomen by a mule.
15	6	John Padden, . . .	Laborer. . . .	35	1	. .	Schooley Shaft, . . .	Exeter bor., Luzerne co., .	Slightly injured by a blast.
17	7	Thomas Watkins, .	Slate picker, . .	14	. .	. .	Prospect Breaker, .	Plains twp., Luzerne co., . .	Head slightly injured by falling off timber he was walking on at breaker.
22	8	George Sayon, . . .	Car loader, . . .	30	. .	. .	do. . .	do. do. . .	First and second fingers taken off by coupling cars at breakers.
Feb. 3	9	William Burke, . .	Driver, ...	17	. .	. .	Hallstead Shaft, . . .	Marcy twp., Luzerne co., . .	Leg broken.
4	10	Henry Peoples, . .	Laborer, ...	40	. .	. .	Prospect Shaft, ...	Plains twp., Luzerne co., . .	Leg fractured by a fall of rock.
8	11	John Lidak, . . .	do.	24	. .	. .	Halistead Shaft, . .	Marcy twp., Luzerne co.. . .	Leg injured by a premature blast.
8	12	Edward Davis, . . .	Door boy, ...	15	.	. .	East Boston Shaft, . .	Kingston twp., Luzerne co.,	Small bone of his leg broken by being caught by car.
	13	Thos. A. Thomas, .	Driver, ...	17	. .	. .	Twin Shaft, ...	Pittston bor., Luzerne co., .	Arm badly fractured by car going over it.
9	14	Martin Welsh, . . .	Laborer, ...	24	. .	. .	Sibley Shaft, ...	Old Forge twp., Lacka. co.,	Severely injured on the back by a piece of coal from a blast.
9	15	John Hagerty, . . .	Footman, ...	16	. .	.	Wyoming Shaft, . . .	Plains twp., Luzerne co., . .	Struck by a piece of a car wheel while running away on slope.
9	16	William Pepper, . .	Laborer, ...	40	1	. .	East Boston Breaker,	Kingston twp., Luzerne co.,	Painfully injured by being squeezed between cars at breaker.
16	17	Elliott Laphey, . .	Plane footman, .	21	. .		Black Diamond Shaft,	do. do.	Slightly injured by being struck by car coming down gravity plane.
17	18	Monroe Hanker, .	Driver, ...	17	. .	. .	Forty Fort Shaft, . . .	do. do.	Severely injured by being squeezed between cars and pillar.
18	19	William Roberts, .	do.	18	. .	. .	Keystone Slope. . . .	Plains twp., Luzerne co., . .	Collar bone broken by falling under car.
18	20	Stephen Suskey, .	Laborer, ...	27	. .	. .	Forty Fort Shaft, . . .	Kingston twp., Luzerne co.,	Severely injured by a fall of rock.
19	21	Robert Hislope, . .	Runner, ...	19	. .	. .	Enterprise Shaft, . . .	Plains twp., Luzerne co., . .	Severely injured by having his head squeezed between cars.
22	22	M. E. Collier, . . .	Miner, ...	46	1	3	Mosier Shaft, ...	Hughestown bor., Luz. co., .	Arm and body badly bruised by a runaway on plane.

TABLE No. 5—Continued.

Date of accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Feb. 22	23	Anthony Becker, .	Miner, ...	35	1	3	East Boston Shaft, . .	Kingston twp., Luzerne co.,	While barring down coal he fell, cutting his arm.
28	24	Stephen Morety, .	Laborer, ...	28	1	1	Mill Creek Slope, . . .	Plains twp., Luzerne co., . .	Seriously injured by a fall of rock.
Mar. 2	25	William Devlin, . .	do.	22			Prospect Shaft, ...	do. do. . .	Struck on neck by lever while putting on locomotive.
5	26	Thomas White, . .	Driver, ...	15	. .	. .	Greenwood Shaft, . .	Lacka. twp., Lacka. co., . .	Knee slightly injured by being caught between the bumpers of cars.
7	27	D. Wigownsky, . .	Laborer, ...	31	1	. .	Black Diamond Shaft,	Kingston twp., Luzerne co.,	Slightly injured on foot by piece of slate falling on it.
8	28	N. Pennergras, . .	Miner, ...	33	.	. .	Bernice Drift	Bernice, Sullivan co., . . .	Back and leg severely injured by fall top coal.
10	29	Michael McGlynn, .	Laborer, ...	21	. .	. .	East Boston Shaft, . .	Kingston twp., Luzerne co.,	Foot injured by rock falling on it.
15	30	Michael Stinson, . .	Miner, ...	28	. .	. .	Henry Shaft, ...	Plains twp., Luzerne co., . .	Knee and ankle slightly injured by coal falling on them.
21	31	Henry Courtright,	Driver, ...	22	. .	. .	do.	do. do. . .	Skull fractured by a kick of a mule.
23	32	Matthew Breen, . .	do.	17	. .	. .	Schooley Shaft, ...	Exeter bor., Luzerne co., . .	Squeezed between mine cars.
25	33	Thomas Oriel, . . .	do.	17	. .	. .	Prospect Shaft, ...	Plains twp., Luzerne co., . .	Toes crushed: foot caught in rails of track and car wheel came on them.
28	34	Edward Harris, . .	Miner, ...	24	. .	. .	Wyoming Shaft, . . .	do. do. . .	Slightly injured by fall of roof rock.
31	35	Thomas Stacy, . . .	do.	23	. .	. .	do. . . .	do. do. . .	Seriously injured by fall of rock.
31	36	James McGaff, . . .	Plane boy, ...	15	. .	. .	Prospect Breaker, . .	do. do. . .	Hip slightly squeezed by the culm car outside.
Apr. 1	37	John Bosley, ...	Laborer, ...	21	. .	. .	Shaft No. 13 Breaker,	Pittston twp., Luzerne co., .	Leg fractured by being caught between cars at breaker.
2	38	Noah Loomis, . . .	Miner, ...	35	1	4	Hunt Shaft, ...	Wyoming, Luzerne co., . . .	Severely injured on back by coal falling on him.
4	39	Richard O. Bryan, .	Driver.	16	. .	. .	Consolidated Shaft, .	Pleasant Valley bor., Luz. co.,	Slightly squeezed between car and prop.
5	40	Wm. B. McDowell,	Miner, ...	25	1	1	Hunt Shaft, ...	Wyoming, Luzerne co., . . .	Injured slightly by a fall of coal.
6	41	Lewis Dempsy, .	do.	35	. .	.	Mill Creek Slope, . .	Plains twp., Luzerne co., . .	Seriously injured by a premature blast.
9	42	Andrew Wekoski, .	Laborer, ...	23		. .	Mineral Spring Slope,	Parsons bor., Luzerne co., .	Leg fractured by a fall of rider coal.
9	43	David Barnes, .	Driver, ...	15	.		Black Diamond Shaft,	Kingston twp., Luzerne co.,	Slightly injured by falling under cars.
21	44	Jenkins J. Evans, .	Miner, ...	65	1	.	East Boston Shaft, . .	do. do.	Arm injured by rock falling on it.
23	45	Evan John, . . .	Water baller, . .	64	1	4	Hallstead Shaft, . . .	Marcy twp., Luzerne co., . .	Slightly injured by mine car while blocking the wheels.
May 3	46	Joseph Laggin, . .	Miner, ...	30	1	1	Wyoming Shaft, . .	Plains twp., Luzerne co., . .	Slightly injured by fall of rock.
4	47	William Jones, . .	Driver, ...	15	. .	.	Black Diamond Shaft,	Kingston twp., Luzerne co.,	Hand bruised between car and culm-pipe.
5	48	Mallcha Lannahan,	Miner, ...	30	1	3	Enterprise Shaft, . . .	Plains twp., Luzerne co., . .	Seriously injured by a fall of top coal.

	7	49	John Brown,	Laborer,	23			Mineral Spring,	Parsons bor., Luzerne co ,	Head slightly injured by a fall of top rock.
	11	50	John Guthrer,	do.	34	1	2	Forty Fort,	Kingston twp., Luzerne co.,	Leg fractured by fall of rock.
	11	51	William Pifer,	Car loader,	44	1	5	East Boston,	do. do.	Foot bruised between car bumpers at breaker.
	16	52	Michael Brennan,	Car runner,	17			Enterprise,	Plains twp , Luzerne co.,	Thumb broken by spragging a car.
	17	53	Peter McHale,	Miner,		1		Mosier,	Hughestown bor., Luz. co.,	Slightly burned about the face and hands by an explosion of gas
	20	54	James Doran,	do.	66	1	4	Hunt,	Wyoming, Luzerne co.,	Arm and four ribs fractured by a premature blast.
	20	55	John Brotherto,	do.	38	1	4	Oakwood,	Plains twp., Luzerne co.,	Head cut by a piece of top coal falling on him.
	31	56	George Shedlock,	do.	26	1	2	Wyomin g,	do. do.	Seriously burned by an explosion of gas.
June	3	57	Anthony Morris,	Laborer,	25			Prospect,	do. do.	Fingers crushed by unloading a car of props outside
	4	58	Cornelius Ryan,	Driver,	18			do.	do. do.	Painfully bruised about the hips by being squeezed between car and prop.
	7	59	Timothy Davis,	Miner,	24			do.	do. do.	These two were burned at the same time on hands and face by an explosion of gas.
	7	60	Thos. Williamson,	Laborer,	22			do.	do. do.	
	14	61	John Parduski,	Miner,	42	1	4	Mill Creek,	do. do.	Seriously injured by a fall of rock.
	14	62	Michael Ostroski,	do.	38	1	4	do.	do. do.	Leg seriously injured so as to make amputation necessary.
	18	63	Bernard Dimpsy,	Linker,	26			Twin,	Pittston bor., Luzerne co.,	These three men were burned by an explosion of gas.
	18	64	Francis Donohue,	Headman,	24			do.	do. do.	
	18	65	Michael Finan,	Linker,	26	1		do.	do. do.	
	23	66	Edward Parry,	Door boy,	15			East Bo ton,	Kingston twp., Luzerne co.,	Leg fractured by being caught between car and prop.
	24	67	Patrick Haley,	Laborer,	50			Boston,	Jenkins twp., Luzerne co.,	Small bone of leg fractured by fall of coal.
	24	68	John Vaughn,	Miner,	60	1	5	Shaft No. 7,	do. do.	Slightly injured by fall of top coal.
July	5	69	James Hamilton,	Car loader,	38		6	Prospect,	Plains twp., Luzerne co.,	Hips squeezed between cars outside at breaker.
	9	70	Moses McGee,	Miner,	32			Black Diamond,	Kingston twp., Luzerne co.,	Injured slightly by flying coal from a premature blast.
	16	71	Peter Sweency,	do.	30			Henry,	Plains twp,, Luzerne co.,	Injured slightly by a piece of rock falling on him while working out a shot.
	18	72	John Weligus,	Laborer,	25			Harry E..	Kingston twp., Luzerne co.,	Ankle dislocated by a fall of rock while repairing road.
	18	73	David John,	Headman,	25			Prospect,	Plains twp., Luzerne co.,	Throat injured by running against a pointed board which was raised from the ground.
	21	74	Isaiah Williams,	Miner,	50		1	do.	do. do.	Slightly burned on face and hands by gas after firing a blast.
	20	75	John Jones,	Timberman,	30			do.	do. do.	Shoulder and ankle slightly bruised by a fall of rock.
	30	76	William Dawson,	Driver,	18			Hunt,	Wyoming, Luzerne co.,	Seriously injured by jumping into an empty coal chute to slide down.
Aug.	3	77	Joseph Raiston,	Runner,	25	1	2	Enterprise,	Plains twp., Luzerne co.,	Fingers badly bruised by spragging a car.
	3	78	Peter Hogan,	Miner,	26			Keystone,	do. do.	Legs and feet painfully bruised by a fall of coal.
	4	79	Thomas Crouse,	Laborer,	33	1	1	East Boston,	Kingston twp., Luzerne co.,	Foot injured by fall of slate.
	4	80	James Williams,	Runner,	23			do.	do. do.	Hand bruised while putting car on track.
	8	81	Jenkin David,	Slope footman,	23			Prospect,	Plains twp., Luzerne co.,	Hand crushed by wheel of mine car going over it.
	10	82	James Tierney,	do.	55	1	4	No. 14 Slope,	Jenkins twp., Luzerne co.,	Leg fractured below knee by being caught between empty car and pillar.
	13	83	Edward Lafrance,	Laborer,	21			Hunt,	Wyoming, Luzerne co.,	Foot and ankle badly bruised by rock falling on it.
	13	84	Matius Portal,	do.	40	1	1	Schooley.	Exeter bor., Luzerne co ,	Leg fractured by mule falling against him.

TABLE No. 5—Continued.

Date of accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Aug. 17	85	Owen O. Boyle, . .	Miner, ...	40	1	6	Hunt, ...	Wyoming, Luzerne co., . .	Foot injured by rock falling on it.
24	86	John Papsin, ...	do.	24	. .	. .	Prospect, ...	Plains twp., Luzerne co., . .	Thigh fractured by a piece of top coal he was barring down
25	87	Frank Hagerty, . .	Driver, ...	17	. .	. .	do.	do. do. . .	Face and hands slightly burned by gas.
27	88	Edward Ralston, .	do.	16	. .	. .	Hallstead, ...	Marcy twp., Luzerne co., . .	Leg cut by coal falling off car while he was coupling the cars.
30	89	Michael Dolan, .	Miner, ...	40	. .	. .	Mill Hollow, ...	Luzerne bor., Luzerne co., .	Severely injured by a prop falling on him.
Sept. 5	90	Wm. Goldsworth, .	do.	30	. .	. .	Hoyte Shaft, ...	Jenkins twp., Luzerne co., .	Burned by an explosion of powder.
5	91	James Welsh, . .	Driver, ...	15	.	. .	Barnum Shaft, ...	Marcy twp., Luzerne co., . .	Arm broken by falling off a mule outside.
7	92	John McNalley, . .	Miner, ...	50	1	. .	Old Forge.	Old Forge twp., Lacka. co., .	Seriously injured by a premature blast.
9	93	Joseph Clancy, . .	Laborer, ...	25	. .	. .	Shaft No. 5.	Jenkins twp., Luzerne co., .	Leg fractured above the knee by a fall of rock.
10	94	Richard Bowden, .	do.	24	. .	. .	Hoyte Shaft, ...	do. do. .	Skull fractured by a premature blast.
14	95	Henry Langdon, .	do.	. .	. .	. .	Henry, ...	Plains twp., Luzerne co., . .	While pushing a car a piece of rock fell, fracturing his arm.
16	96	James Graham, . .	do.	35	. .	. .	East Boston, ...	Kingston twp., Luzerne co.,	Top of finger taken off while unloading a car of props.
23	97	John Kane. . . .	Driver, ...	14	. .	. .	Mosier, ...	Hughestown bor., Luz. co.,	Fell under loaded car, bruising him severely.
27	98	Edward Caffrey,	Miner, ...	55	1	3	Bennett, ...	Plains twp., Luzerne co., . .	Foot badly cut and bruised by a fall of coal.
Oct. 5	99	Thomas Jordan, .	do. . . .	35	1	2	Elmwood, ...	Pittston twp., Luzerne co.,	Skull fractured by a fall of coal.
11	100	Michael Barrett, .	Company laborer,	23		.	Black Diamond, . . .	Kingston twp., Luzerne co.,	Leg fractured by being struck by rope of plane.
11	101	James McGlorey, .	Miner, ...	34	1	7	East Boston, ...	do. do.	Seriously injured on head and shoulder by premature blast.
18	102	Joseph Barre, . . .	Laborer, ...	40		. .	Twin, ...	Pittston bor., Luzerne co., .	Arm and ribs broken by a fall of rock.
19	103	Frank Dean, ...	Miner, ...	45	1	. .	Henry, ...	Plains twp., Luzerne co., . .	Head and shoulders cut by coal flying from premature blast.
20	104	Thomas Galligher,	Driver, ...	18	. .	. .	Prospect, ...	do, do. . .	Slightly bruised by being caught between car and pillar.
20	105	Joseph Kosesky, . .	Tower footman,	38	1	4	Shaft No. 14, ...	Jenkins twp., Luzerne co., .	Leg fractured in two places by being caught in cage pit breaker.
21	106	Thomas Barrett, . .	Miner, ...	30	1	2	do.	do. do. .	Seriously injured by a premature blast.
24	107	John Campbell, . .	do.	22	.	. .	Hallstead, ...	Marcy twp., Luzerne co., . .	Slightly burned on face and hands by gas.
25	108	Patrick Lynch, . .	Oiler, ...	15		. .	Harry E., ...	Kingston twp., Luzerne co.,	Collar bone fractured by being caught between car and pillar.
27	109	Fred Taylor, ...	Laborer, ...	19	. .	. .	Shaft No. 14, ...	Jenkins twp., Luzerne co., .	Bone of foot broken by fall of rider coal.
27	110	Alfred King, ...	Driver, ...	19	. .	. .	East Boston, ...	Kingston twp., Luzerne co.,	Arm fractured and wrist dislocated coupling cars.

Oct.	28	111	George Rickard,	Miner,	26	1		Prospect,	Plains twp., Luzerne co.,	Toes cut off by a piece of rock falling on them.
	31	112	John Knapp,	Engineer,	16			do.	do. do.	Hand cut by connection rod of compressor engine.
Nov.	2	113	Michael Flannery,	Miner,	40	1	5	No. 4 Slope,	Jenkins twp., Luzerne co.,	Leg fractured by fall of rock.
	2	114	James Walsh,	do.	48	1		Hailstead,	Marcy twp., Luzerne co.,	Seriously injured by premature discharge of a blast.
	8	115	Stephen Schuh,	do.	28			do.	do. do.	Leg fractured by being caught by a car.
	10	116	James Maton,	Footman,	55			Butler,	Pittston twp., Luzerne co.,	Arm fractured by being caught between cars.
	11	117	Phil. Palamountain,	Driver,	18			East Boston,	Kingston twp., Luzerne co.,	Seriously injured by kick of a mule.
	15	118	Barney O. Boyle,	laborer,	18			Hunt,	Wyoming, Luzerne co.,	Ribs fractured by fall of coal.
	16	119	James Burt,	Miner,	50			Bennett,	Plains twp., Luzerne co.,	Ribs fractured by fall of top rock.
	17	120	George Stroko,	Laborer,	35	1	3	Prospect Butler,	do. do.	Three fingers crushed while coupling cars.
	25	121	Gilbert White,	Miner,	40	1	3	Butler,	Pittston twp., Luzerne co.,	Leg fractured below knee by fall of coal.
	26	122	Michael Cawley,	do.	37	1	5	Pine Ridge,	Miners' Mills bor., Luz. co,	Ribs fractured and spine injured by fall top coal.
	26	123	Patrick Lyden,	do.	40	1	6	Fairmount Shaft,	Pittston twp., Luzerne co.,	Seriously burned by gas while going into his chamber.
Dec.	5	124	Hugh Quinn,	Driver,	17			Mill Hollow Shaft,	Luzerne bor., Luzerne co.,	Leg fractured by falling under cars.
	5	125	Frank Jackson,	Miner,	40	1	10	Laws Shaft,	Pittston twp., Luzerne co.,	Thigh fractured by fall of rock at face of his chamber.
	8	126	John Shallay,	Driver,	28	1	2	East Boston Breaker,	Kingston twp., Luzerne co.,	Bruised slightly by falling under culm car.
	8	127	Joseph McCabe,	Laborer,	25			Mill Hollow Shaft,	Luzerne bor., Luzerne co.,	Toes crushed by rock falling on them.
	8	128	Martin O. Bromky,	Door boy,	15			Pine Ridge Shaft,	Miners' Mills bor., Luz. co.,	Badly bruised by car knocking the door on him.
	8	129	Michael Melvin,	Miner	38			Twin Shaft,	Pittston bor., Luzerne co.,	Slightly injured by fall of top rock.
	9	130	Henry Anderson,	do.	45	1	3	Black Diamond Shaft,	Kingston twp., Luzerne co.,	Seriously injured by a premature blast.
	10	131	William L. Boyd,	do.	32	1	3	Mill Hollow Shaft,	Luzerne bor., Luzerne co.,	Leg fractured and ankle dislocated.
	10	132	Thomas C. Blight,	Laborer,	23	1	1	do.	do. do.	Leg fractured and cut on neck.
	10	133	Chas. Cunningham,	do.	22			do.	do. do.	Head slightly cut.
	10	134	John Kesler,	Miner,	35	1		do.	do. do.	Foot bruised by fall of rock.
	12	135	Joseph Laba,	do.	35	1		Schooley Shaft,	Exeter twp., Luzerne co.,	Burned by an explosion of powder.
	12	136	William Jurus,	Laborer,	37	1		do.	do. do.	
	12	137	Anthony Geleskie,	Miner,	45	1	2	do.	do. do.	
	14	138	E. N. Thompson,	Footman,	30			Black Diamond Shaft,	Kingston twp., Luzerne co.,	Foot slightly injured by coal falling down shaft.
	16	139	Roland Jones,	Laborer,	27			Wyoming Shaft,	Plains twp., Luzerne co.,	Seriously injured by a fall of top rock.
	16	140	Patrick Brannan,	Driver,	16			Enterprise Shaft,	do. do.	Foot seriously bruised by being caught under wheel of car.
	16	141	Daniel Morgan,	Miner,	45	1	6	Wyoming Shaft,	do. do.	Burned by explosion of gas.
	16	142	Thomas Silarn,	Laborer,	30	1	3	do.	do. do.	
	17	143	William Mays,	Miner,	40	1	4	Dunn Shaft,	Old Forge twp., Lacka. co.,	Slightly injured by flying coal from a blast.
	17	144	Henry Brezee,	Driver,	16			Sibley Breaker,	do. do.	Slightly injured by falling under moving cars.
	23	145	Thomas Henahan,	Miner,	50	1		Henry Shaft,	Plains twp., Luzerne co.,	Ankle broken by fall of rider coal.
	23	146	Edward Miller,	Company man,	32			Consolidated Breaker,	Pleasant Valley bor., Luz. co.,	Knee bone broken by being caught between cars at breaker.

TABLE No. 6.—Showing the mode and state of ventilation in all the Collieries operated in the Second Anthracite District of Pennsylvania, for the year ending December 31, 1887.

Number.	NAME OF COLLERIES.	Fan or furnace.	Total air at intake.	Amount of air at or near the face.	Total number of splits of air.	Number of men in all the splits.	Total amount of air at outlet.
1	Prospect Shaft,	Fan,	129.116	71,246	6	170	130 426
2	Oakwood Shaft,	do.	122.481	57 343	4	115	125.146
3	Wyoming Shaft,	2 fans,	144 700	125 900	6	193	157,650
4	Henry Shaft,	do.	182.240	105,370	6	237	20 .080
5	Midvale Slope,	Fans,	74 198	8. 50	6	17	75.240
6	Mineral Spring Slope,	do.	55,000	32,000	2	116	58 000
7	Coal Brook Slope,	Natural,	Have not got the second opening through yet.				
8	Maltby Shaft,	Fan,	Has not worked any this year.				
9	Exeter Shaft,	2 fans,	50.800	27 120	2	90	43 700
10	Heidelburg Shaft,	do.	95 000	7 .620	4	90	108 000
1	Ontario Slope,	do.	15.000	12 420	1	32	17.000
12	Barnum Shaft,	do.	92 380	86 640	6	186	91.400
13	Barnum No. 2, Shaft,	do.	59,580	30, 320	4	115	60.700
14	Shaft No. 9,	do.	52 060	34, 00	3	132	55 600
15	Abbotts Slope,	do.	23,000	22 300	2	48	23,000
16	Shafts No. 0 and 10 jr,	do.	90.000	83 750	6	130	92,160
17	Shaft No. 1,	do.	25 000	22.800	2	110	25.600
18	Shaft No. 8,	do.	32.600	28.300	2	107	33 800
19	Slope No. 4,	do.	25 000	20 310	2	98	26.000
20	Shaft No. 7,	do.	42.950	37,610	3	133	43 200
21	Shaft No. 5,	do.	35 600	34 820	2	82	36 365
22	Shaft No. 6,	do.	38.600	19 500	3	85	39 200
23	Shaft No. 1,	do.	14,720	12,700	1	42	18 600
24	Shaft and Slope No. 14,	do.	81 120	70 990	5	160	83 720
25	Old Forge Shaft,	do.	58 244	46 610	5	214	95 080
26	Starks Shaft,	do.	7,900	7,086	1	5	8.315
27	Shaft No. 13,	do.	60.660	50 895	3	138	56 02
28	Laws Shaft,	do.	52,075	43 120	4	149	62 020
29	Laurel Run Slope,	do.	145.260	94 782	6	193	139.384
30	Pine Ridge Shaft,	do.	96.880	75 990	3	210	94 380
31	Mill Creek Slope and Shaft,	3 fans,	22,275	21 010	2	19	22,360
32	Pettebone Shaft,	Have not finished sinking the shaft yet.					
33	Hunt Shaft,	Fan,	76,800	67 000	4	184	86.000
34	Hallstead Shaft,	2 fans,	105,150	92 495	6	258	105 285
35	Forty Fort Shaft,	do.	50 180	32 600	3	120	.9 400
36	Harry E Shaft,	Fan,	59.360	30, 40	5	141	40.000
37	Schooley Shaft,	do.	75,866	66,650	2	88	89 700
38	Boston Slope and Drift,	Furnace,	24,200	21 000	2	55	25.200
39	Twin Shaft,	Fan,	51.600	31 800	2	87	61.900
40	Mosier Shaft and Slope,	do.	48,150	46 800	3	110	49.500
41	Bennett Shaft,	do.	65,410	44 820	3	126	57.360
42	Mill Hollow Shaft,	do.	54,000	34 000	3	72	58 500
43	Bernice Drift,	Furnace,	33,000	30,120	2	130	33 210
44	Black Diamond Shaft,	Fan,	76 800	75 100	4	154	95,300
45	Butler Shaft,	Natural,	24.500	19 410	2	50	24 000
46	Clear Spring Shaft,	Fan,	60,300	41,400	5	202	60,500
47	Consolidated Shaft,	do.	76,600	61,150	2	98	81.170
48	Consolidated Slope,	Furnace,	33.000	25.600	2	105	34 180
49	Dunn Shaft,	Fan,	76,560	57,730	3	148	76.340
50	Elmwood Shaft,	do.	56.360	45.550	2	138	60 300
51	Enterprise Shaft,	do.	66,200	19, 800	3	91	66 700
52	Enterprise Slope,	do.	35.000	32.000	1	14	44 000
53	East Boston Shaft,	do.	123,200	88,300	6	179	147, 00
54	Fairmount Shaft,	do.	31.310	2 .210	2	97	35.735
55	Greenwood Shaft,	do.	39.600	26,050	2	120	54 000
56	Hillman Slope,	do.	12.100	10.160	1	50	12 380
57	Keystone Slope,	do.	60.615	22.722	3	77	60.460
58	Sibley Shaft,	do.	40,600	37.600	3	180	42 000
59	Columbia Shaft and Tunnel,	Furnace and fan,	38,000	31.840	3	93	3 .910
60	Katy Did Tunnel,	Furnace,	10,200	9,700	1	18	10,300

THIRD ANTHRACITE DISTRICT.

Office of Inspector of Mines,
Third District Anthracite Coal Field,
Wilkes-Barre, Pa., *March 16, 1888.*

Hon. Thomas J. Stewart,
Secretary of Internal Affairs:

Sir: I have the honor of presenting herewith my annual report as inspector of coal mines in the Third district of the anthracite coal field, for the year 1887. It contains the usual tables, which show that 7,540,754 tons of coal were mined during the year 1887, an increase of 605,439 tons over the production of 1886.

The number of fatal accidents were 65, leaving 33 widows and 120 orphans, an increase of 7 fatal accidents, 1 widow and 22 orphans.

The number of serious non-fatal accidents were 295, an increase of 48 over the non-fatal accidents of 1886.

While we have cause to regret that so many accidents occur, the result is very satisfactory as compared with past years. Having received several letters from the Chief of the Bureau of Statistics, urging me to make my report as brief as possible, I have endeavored to do so.

Yours, very respectfully,
G. M. Williams,
Inspector of Mines.

Total Tons of Coal Mined During the Year 1887.

	Tons.
Lehigh and Wilkes-Barre Coal Company,	2,178,150.02
Delaware and Hudson Canal Company,	1,106,146.05
Susquehanna Coal Company,	1,561,530.04
Kingston Coal Company,	869,598.07
Miscellaneous coal companies,	1,825,329.09
Total of all coal companies,	7,540,754.07

Number of Fatal Accidents and Tons of Coal Produced per Life Lost.

NAMES OF THE OPERATORS.	Number of lives lost.	Tons of coal mined per life lost.
Lehigh and Wilkes-Barre Coal Company,	20	108,907
Delaware and Hudson Canal Company,	6	184,357
Susquehanna Coal Company,	20	78,076
Kingston Coal Company,	5	173,919
Miscellaneous coal companies,	14	130,380
Totals,	65	116,011

Number of widows, 33; orphans, 120.

Number of Serious and Fatal Injuries and Tons of Coal Produced per Each Person Injured or Killed.

NAMES OF THE OPERATORS.	Number killed or injured.	Tons of coal produced per person killed or injured.
Lehigh and Wilkes-Barre Coal Company,	79	27,571
Delaware and Hudson Canal Company,	31	35,682
Susquehanna Coal Company,	91	17,159
Kingston Coal Company,	29	29,986
Miscellaneous coal companies,	65	28,082
Totals,	295	25,561

Classification of Fatal and Non-Fatal Accidents.

CAUSES OF ACCIDENTS.	Killed or fatally injured.	Seriously injured.
By explosion of carbureted hydrogen,	6	41
By falls of roof and coal,	27	89
Crushed and run over by cars,	11	37
By explosions of powder and blasts,	3	23
Miscellaneous causes, inside,	7	22
Miscellaneous causes, outside,	11	20
Totals,	65	232

In addition to the above number of non-fatal accidents, seventy-one were reported as very slightly injured. These men were disabled only for a few days, and they were not considered to be injured seriously enough to include in this report.

Condition of the Mines.

The mines of this district are generally in good condition. As shown in table A, the total quantity of air entering the mines per minute in the month of December, was 5,174,472 cubic feet, an average of 391 cubic feet for each person employed under ground. It was divided into 244 separate currents, or splits, and exhausted by 64 fans. This is sufficient to show that the average ventilation is excellent. There are only three collieries in the district where I have cause to complain of the quantity of air circulating, and in these preparations are being made to increase the quantity as soon as practicable. Explosive gases are evolved in all except nine of the collieries of this district. And in some of them, the quantity is enormous. But the quantity of air in those mines is sufficient to dilute the gas to such a degree that not a trace is seen in the flame of the safety-lamp. The safety-lamp, however, does not show less than about 3 per cent. of gas, and when air is mixed with it, from 5 to 6 per cent., the whole becomes explosive. Therefore, the margin of safety between the point where the lamp shows the presence of gas, and where it becomes explosive is very small, and in very gassy mines, where all the men work with naked lights, and where so much powder is used, as in these mines, the gases should be diluted to less than 1 per cent. We cannot state whether it is so diluted in these mines, as we have no means of ascertaining the percentage of gas found in the air when not seen on the flame of the safety-lamp. We have seen, however, that in a few of the mines the air becomes explosive in an exceedingly short time, when the fans are stopped. In a few cases, the air of the whole mine is rendered explosive, in about one hour after the fans are stopped. This naturally causes anxiety as to the result, in case the fan should unexpectedly fail, while the employés are at work. This also, I think, is the weakest guarded point at present in our system of mining, and the only one which points to a possible disaster. I know of no provision better than to call the workmen out as soon as possible when a fan fails to run, but this cannot be done under the present system quickly enough to insure safety in only a few of the gaseous mines.

The provisions of the law in these and other matters are very generally complied with, and I find the operators and officials willing to provide everything required to enhance the safety of the mines.

Speed Recorders on Fans.

Scharar's Automatic Speed Recorders were put on each of the following fans in this district: The Forge Seam fan, No. 2 Slope, No. 4 Slope, The Double fan, Ross Vein fan, No. 2 Shaft, Old Ross Vein

fan, No. 3 Slope fan, McFarland Shaft, No. 1 Shaft, Newport Slope, Newport Shaft, Newport tunnel and the Black Hill fan, all of the Susquehanna Coal Company, Conyngham Shaft and Baltimore Slope of the Delaware and Hudson Canal Company, Hollenback, Stanton and Empire of the Lehigh and Wilkes-Barre Coal Company, Hillman Vein Shaft, Hillman Vein Coal Company and No. 4 Shaft fan of the Kingston Coal Company.

These recorders show the speed of the fan at any time during the day or night, and in a number of instances the effect is very good. The fans are said to have been watched more closely, and their speed maintained more regularly, since the recorders were put on.

TABLE A.—Showing the condition of the ventilation in the Third Anthracite District during December, 1887.

NAMES OF MINES.	Names of Operators or Coal Companies.	Number of fans.	Persons employed in the mines.	Number of separate splits of air.	Cubic feet of air at the inlet.	Cubic feet of air at the face of workings.	Cubic feet of air at the outlet
1. Diamond,	Lehigh and Wilkes-Barre Coal Company,	2	106	7	160,290	157,290	164,900
2. Hollenback,	do. do. do.	2	332	9	329,570	262,090	335 300
3. Empire,	do. do. do.	2	339	5	208,060	136,900	230,000
4. Jersey,	do. do. do.	2	243	6	93,490	58,620	98,225
5. Stanton,	do. do. do.	2	417	7	135,990	168,795	228 862
6. South Wilkes-Barre,	do. do. do.	1	12	1	38,250	29,240	45,600
7. No. 9 Shaft,	do. do. do.	2	296	12	189.880	115,290	91,110
8. Lance No. 11,	do. do. do.	1	316	7	157,920	144.500	179,700
9. Nottingham No. 15,	do. do. do.	1	661	8	153,790	137,230	172,640
10. Reynolds No. 16,	do. do. do.	1	355	5	81,520	44,120	92,500
11. Wanamie No. 13,	do. do. do.	2	227	3	64,300	46,600	71,500
12. Baltimore Slope,	Delaware and Hudson Canal Company,	1	70	3	89,000	89,000	78,400
13. Baltimore Tunnel,	do. do. do.	1	208	3	219,200	103,880	124,000
14. Conyngham,	do. do. do.	1	148	6	171,180	136,800	180,780
15. Boston,	do. do. do.	1	168	4	46,820	41,520	49,670
16. No. 2 Plymouth,	do. do. do.	1	189	4	89 710	74,900	99,040
17. No. 3 Plymouth,	do. do. do.	1	275	6	81,840	73,305	81,840
18. No. 4 Plymouth,	do. do. do.	1	146	2	36,980	28,610	37,250
19. No. 5 Plymouth,	do. do. do.	2	308	7	139.000	136,400	141,000
20. No. 1 Slope,	Susquehanna Coal Company,	1	70	4	19,860	31,360	42,200
21. No. 2 Slope,	do. do.	2	188	5	125,500	53,000	139,500
22. No. 3 Slope,	do. do.	2	93	5	86,439	65,264	88,530
23. No. 4 Slope,	do. do.	2	229	6	203,890	150,190	214,900
24. Newport Slope,	do. do.	1					
25. No. 4 Tunnel,	do. do.	1	80	2	30,600	12,976	12,976
26. Newport Tunnel,	do. do.	1	188	4	114,175	92,005	112,360
27. No. 1 Shaft,	do. do.	1	201	5	121,860	114,902	200.000
28. Deep Shaft,	do. do.	1	210	5	121,610	104,360	74,825
29. No. 2 Shaft,	do. do.	1	402	9	176,732	141,690	185,211
30. Newport Shaft,	do. do.	1	130	4	92,000	69,000	93,000
31. No. 1 Shaft,	Kingston Coal Company,	2	237	5	89,330	60,570	108,300
32. No. 2 Shaft,	do. do.	1	167	5	56,644	51,220	86,364
33. No. 3 Shaft,	do. do.	1	302	6	68,000	53,800	80,250
34. No. 4 Shaft,	do. do.	1	95	5	72,200	57,000	81,800
35. Gaylord Shaft,	do. do.	1	173	3	144.000	38,000	86 000
36. Gaylord Slope,	do. do.	1	103	2	50,000	42,000	68,500

TABLE A.—Continued

NAMES OF MINES.	Names of Operators or Coal Companies.	Number of fans.	Persons employed in the mine.	Number of separate splits of air.	Cubic feet of air at the inlet.	Cubic feet of air at the face of workings.	Cubic feet of air at the outlet.
37. Alden,	Alden Coal Company,	1	350	5	86,900	61,065	95,175
38. Avondale,	Delaware, Lackawanna and Western Railroad Co.,	2	220	7	135,000	125,900	138,900
39. Dodson,	Plymouth Coal Company,	1	227	4	56,935	46,155	59,780
40. Dorrane,	Lehigh Valley Coal Company,	1	75	4	116,867	94,780	169,101
41. West End.	West End Coal Company,	3	167	4	128,000	49,000	180,000
42. Franklin Old Slope,	Franklin Coal Company,	1	114	6	64,100	47,221	102,000
43. Franklin Brown Slope,	Franklin Coal Company,	1	94	7	27,500	23,300	45,000
44. Hillman Vein,	Hillman Vein Coal Company,	1	1 5	5	107,980	74,074	121,794
45. Moffet Tunnel,	Hanover Coal Company,	1	190	3	30,000	13,000	35,000
46. Moffet Shaft,	Hanover Coal Company,						
47. Parrish Slope,	Parrish Coal Company,	1	179	3	55,750	44,250	55,950
48. Parrish Tunnels,	Parrish Coal Company,	1	124	3	00,650	46,400	60,500
49. Red Ash No. 1,	Red Ash Coal Company,	1	163	3	53,625	21,950	53,810
50. Red Ash No. 2,	Red Ash Coal Company,		219	4	44,195	33,426	45,600
51. Warrior Run,	A. J. Davis & Co.,	1	150	6	97,330	58,930	98,910
Totals,		64	10,047	244	5,174,472	3,862,478	5,438,553

N. B.—There were 3,166 persons employed where the main currents were passing which were not reported as working in any particular split of air. Adding this to the above number makes a total of 13,213 persons employed underground, and an average of 391 cubic feet of air per minute was entering the mines for each person employed.

Examination of Applicants for Mine-Foreman's Certificate.

The annual examination of applicants for mine-forman's certificate in the Third district was held in the Central school building, Wilkes-Barre, Pa., June 21 and 22.

The examiners were G. M. Williams, inspector; Charles Conyngham, operator, both of Wilkes-Barre, Pa., and James Fisher, miner, of Nanticoke, Pa.

Forty-five applicants for certificates of qualification appeared for examination, and the following thirty-two were successful:

John W. Joseph, William T. Evans, Daniel P. James, A. J. Gallagher, Andrew H. Weir, John Heycock, Jonathan Weir, William P. Howells, Richard Martin, Jacob D. Jones and Samuel Griffith, of Wilkes-Barre, Pa.; R. M. Williams, Samuel R. Morgan, William E. Howells, T. M. Rees, Edward Roderick, Thomas Cross, John I. Williams, H. G. Willams, Benjamin Richards and John R. Williams, of Plymouth, Pa.; Mordecai Dando, John D. Williams and William A. Jones, of Edwardsdale, Pa.; Henry R. Jones, John Winters and John I. Absalom, of Nanticoke, Pa.; Rees Morgan and John R. Morris, of Sugar Notch; Richard Faull and Griffith G. Roberts, of Ashley; W. S. Williams, of Peeley, Pa.

A. Rees, Nanticoke, Pa., applied for certificate of service, and was recommended to receive one.

Mine Improvements During 1887.

Lehigh and Wilkes-Barre Coal Company.—At the Stanton mine air-shaft this company is erecting a new fan thirty-five feet diameter to duplicate the present one, so that one may be used while the other is undergoing repairs. They have found it dangerous to allow the ventilation to cease traversing, because in such a gaseous mine blowers of gas may be burning which cannot be detected by examination, and yet would ignite the gas when the mine would be filled to the point where the burning blower might be.

At the No. 9 colliery, Sugar Notch, a new fan twenty-four feet diameter is in course of erection to ventilate the upper seams. The workings have extended so that this was found necessary.

At the Nottingham colliery, Plymouth, a new air-shaft 12′x30′ was sunk from the surface to the Ross seam, where it will be connected to the Red Ash seam by a tunnel now being driven for the purpose of improving the ventilation. A fan twenty-four feet diameter is being erected in the shaft which is expected to effect material improvement.

The new shaft at South Wilkes-Barre is sunk to a point twenty-four feet below the Baltimore seam, a total depth from surface of 1,064 feet. The coal was found in its usual thickness of sixteen feet and of excellent quality. They are now at work putting up partitions and linings preparatory to opening the gangways, etc. The indications are favorable for an unusually productive colliery.

Delaware and Hudson Canal Company.—A new opening was effected for the Conyngham colliery, connecting with the workings of the Baltimore slope, in October, 1887. It provides a convenient escape way for the workmen of both collieries, and makes everybody connected with those mines feel safer in case anything should happen to prevent exit through the main openings.

The No. 2 Baltimore shaft is now at a depth of over 500 feet, and is expected to cut the Red Ash seam at a depth of 670 feet. At No. 3, which is to constitute the second opening, gangways are being driven to open work, and to be ready to ship coal when the main shaft shall be completed

At the Boston mines the fan at No. 3 was applied to ventilate its workings, and it gives fair results. Still the ventilation of this mine is not satisfactory, but when the air-ways are fully prepared, an improvement is confidently expected.

Susquehanna Coal Company.—At the No. 1 shaft of this company two new underground slopes were sunk, one in the Forge seam and the other in the Buck Mountain. To avoid the trouble arising from the heat radiating from the steam pipes, the hoisting engines are located on the surface, and the ropes pass through bore-holes made for the purpose. Telephones and electric bells are used to converse and give signals.

At the No. 6 colliery, Glen Lyon, a new fan twenty-five feet diameter was erected. The engine is 24″x36″, connected directly to the shaft of the fan. It is used to ventilate the workings of the shaft. The second openings for the workings of this shaft are now completed to each of the seams.

Kingston Coal Company—The new breaker erected at the No. 4 shaft of this company was started to prepare and ship coal in October, 1887, and has been running since. It is one of the largest structures in the district. It is heated throughout by steam, and is equipped with the most efficient machinery.

Delaware, Lackawanna and Western Railroad Company.—At the Avondale colliery a new fan was erected on the new air-shaft. It is an open fan sixteen feet diameter, connected with a horizontal engine by belt gearing. Under a ventilating pressure equal eight-tenth inch of water-gauge it is exhausting 137,600 cubic feet of air per minute. A new opening was made from the lower lift of the Red Ash seam to the Ross. It is a rock tunnel 226 feet long on a grade of 18½ degrees and 7x18 feet area. It opens an extensive field of this coal seam.

The new breaker at the Woodward shafts is nearly completed. Four cages are in operation in the main shaft, and workings are being opened in both the Bennett and Red Ash seams. Second openings are being driven in both seams to connect with the air-shaft.

West End Coal Company.—A new fan was erected on this colliery sixteen feet in diameter and connected directly with the engine. It is

reported to exhaust 30,000 cubic feet of air per minute while running thirty revolutions.

Parrish Coal Company.—This company erected a new fan on their slope. It is twenty feet diameter, running forty-five revolutions per minute and exhausting 68,000 cubic feet of air per minute.

A. J. Davis.—At the Warrior Run colliery a new air-shaft was sunk, effecting a second opening to the new tunnel. It is 9x9 feet and 206 feet deep, and connects with the Baltimore seam. The main slope is being extended also to a further depth of from two to three hundred feet.

Hanover Coal Company.—The Maffet shaft of this company is being extended from the Ross to the Red Ash seam. It was down a distance of 185 feet below the Ross at the close of the year, and when completed it will open an extensive lift of good coal. A number of other improvements were made during the year.

Coal Breakers Consumed by Fire.

On Sunday, January 16, 1887, between one and two o'clock A. M., the Boston breaker of the Delaware and Hudson Canal Company, at the upper end of Plymouth, took fire and was totally consumed. It is not known how it originated, but everything in and about the breaker was destroyed. By November 3rd, a new breaker was erected near the Boston shaft, about a mile and a quarter north-east of the site of the old one. This is a great improvement on the old one. They began to pass coal through it on the date mentioned. They worked eight and one-fourth days before the old breaker took fire and forty-one and three-fourths days with the new one before the close of the year.

Burning of the Parrish Coal Company Breaker.

At about ten o'clock P. M., January 25, 1887, the breaker of the Parrish Coal Company, at Plymouth, was discovered to be on fire, and although strenuous efforts were made to prevent its destruction, it was completely destroyed in a short time. It was comparatively a new breaker, having been in operation only since December, 1884, about a month more than three years. Preparations were immediately made to erect a new one, and on July 7 it was completed and started to prepare coal for shipment to market. The new one is a fine structure, larger than the old one, and has the best appliances for preparing and separating coal.

Burning of the No. 10 Breaker.

The No. 10 breaker of the Lehigh and Wilkes-Barre Coal Company, at Sugar Notch, took fire from a passing locomotive early Monday morning, May 2, 1887, and it, with every building within a radius of two hundred feet was completely destroyed. The engine-house and slope head house on the old No. 10 slope was burned, and the cage

loaded with burning embers went down and set the slope on fire. Thus the destruction of this mine was completed. The pumps and everything in the mine were lost, and the workings had to be abandonsd and filled with water. This mine had not been in operation since December, 1884. A tunnel had been driven through the rock from the upper lift connecting with the No. 9 colliery, and upon concluding to abandon the workings of No. 10, a water-dam was erected on this tunnel to prevent the water running into the No. 9 workings. A timber dam was placed at a distance of thirty feet back from the brick dam, in which a small hole was bored to let the water through. The timber dam is submerged in the water, and in case the brick one should give way under the pressure, it would prevent the water from rushing into the No. 9 workings too suddenly. When the mine fills there will be a head of over two hundred feet or a pressure of more than 12,500 pounds on every square foot of surface. The brick dam is carefully built of the best brick obtainable, laid in the best cement. It is seven feet thick, curving on a radius of nine feet, and resting on deep hitches in the rock on each side. No one has the slightest doubt as to its strength to sustain the pressure with perfect safety.

TABLE No. 1.—Showing location of collieries in the Third Anthracite Mine District.

Name of Colliery.	Name of Operator.	Location—Luzerne county.	Name of Superintendent.	Post-Office Address.
Diamond,	Lehigh and Wilkes-Barre Coal Co.,	Wilkes-Barre,	T. H. Phillips; W. T. Smyth and S. Tonkin assts.,	Wilkes-Barre, Pa.
Hollenback,	do. do. do.	do.	do. do. do. do.	do.
Empire,	do. do. do.	do.	do. do. do. do.	do.
Stanton,	do. do. do.	do.	do. do. do. do.	do.
South Wilkes-Barre,	do. do. do.	do.	do. do. do. do.	do.
Tillinghast,	do. do. do	do.	do. do. do. do.	do.
Jersey,	do. do. do.	Ashley,	do. do. do. do.	do.
Sugar Notch Shaft,	do. do. do.	Sugar Notch,	do. do. do. do.	do.
Lance No. 11,	do. do. do.	Plymouth,	do. do. do. do.	do.
Nottingham,	do. do. do.	do.	do. do. do. do.	do.
Reynolds,	do. do. do.	do.	do. do. do. do.	do.
Wanamie,	do. do. do.	Wanamie, Newport township,	do. do. do. do.	do.
Baltimore Slope,	Delaware and Hudson Canal Co.,	Wilkes-Barre township,	A. H. Vandling; C. H. Scharar, engineer,	Providence Scranton, Pa.
Baltimore Tunnel,	do. do. do.	Wilkes-Barre,	do. do. do.	do. do.
Baltimore Shaft,	do. do. do.	Wilkes-Barre township,	do. do. do.	do. do.
Conyngham,	do. do. do.	Wilkes-Barre,	do. do. do.	do. do.
Boston,	do. do. do.	Plymouth township,	do. do. do.	do. do.
No. 2 Plymouth,	do. do. do.	Plymouth,	do. do. do.	do. do.
No. 3 Plymouth,	do. do. do.	do.	do. do. do.	do. do.
No. 4 Plymouth,	do. do. do.	do.	do. do. do.	do. do.
No. 5 Plymouth,	do. do. do.	do.	do. do. do.	do. do.
No. 4 Tunnel,	Susquehanna Coal Company,	Nanticoke,	I. A. Stearns, gen. man., and G. T. Morgan, gen. supt.,	Wilkes-Barre, Pa.
No. 1 Slope,	do. do.	do.	do. do. do.	Nanticoke, Pa.
No. 2 Slope,	do. do.	do.	do. do. do.	do.
No. 3 Slope,	do. do.	West Nanticoke,	do. do. do.	do.
No. 4 Slope,	do. do.	Nanticoke,	do. do. do.	Wilkes-Barre, Pa.
No. 1 Shaft,	do. do.	do.	do. do. do.	Nanticoke, Pa.
No. 2 Shaft,	do. do.	do.	do. do. do.	do.
Newport Shaft,	do. do.	Glen Lyon,	do. do. do.	do.
Newport Slope,	do. do.	do.	do. do. do.	do.
Newport Tunnel,	do. do.	do.	do. eo. do.	do.
No. 1 Shaft,	Kingston Coal Company,	Edwardsdale,	Daniel Edwards,	Kingston, Pa.
No. 2 Shaft,	do. do.	do.	do.	do.
No. 3 Shaft,	do. do.	do.	do.	do.
No. 4 Shaft,	do. do.	do.	do.	do.
Gaylord Shaft,	do. do.	Plymouth,	do.	do.
Gaylord Slope,	do. do.	do.	do.	do.
Alden Tunnel,	Alden Coal Company,	Alden,	K. M. Smith,	Alden, Luzerne co., Pa.
Alden Shaft,	do. do.	do.	do.	do. do.
Avondale,	Del., Lackawanna & West. R. R. Co.	Plymouth township,	W. R. Storrs, G. M., B. Hughes, G. I. F., W. H. Storr, G. O. F.,	Scranton, Pa.
Woodward No. 1,	do. do. do.	do.	do. do. do.	do.
Woodward No. 2,	do. do. do.	do.	do. do. do.	do.
Dodson,	Plymouth Coal Company,	Plymouth,	James B. Davies,	Plymouth, Pa.
Dorrance,	Lehigh Valley Coal Company,	Wilkes-Barre,	Fred. Mercur,	Wilkes-Barre, Pa.
East End,	West End Coal Company,	Mocanaqua,	John Teasdale,	Shickshinny, Pa.
West End,	do. do.	do.	do.	do.

TABLE No. 1—Continued.

Name of Colliery.	Name of Operator.	Location—Luzerne county.	Name of Superintendent.	Post-Office Address.
Franklin Slope,	Franklin Coal Company,	Wilkes-Barre,	R. R. Morgan,	Wilkes-Barre, Pa.
Brown Slope,	do. do.	do.	do.	do.
Rock Slope,	do. do.	do.	do.	do.
Hillman Shaft,	Hillman Vein Coal Company,	do.	Joseph Shearn,	do.
Maffet Shaft,	Hanover Coal Company,	Sugar Notch,	J. Roberts, Jr.,	do.
Maffet Tunnel,	do. do.	do.	do.	do.
No. 1 Red Ash,	Red Ash Coal Company,	Wilkes-Barre township,	M. B. Williams,	do.
No. 2 Red Ash,	do. do.	do.	do.	do.
Warrior Run,	A. J. Davis,	Hanover township,	A. J. Davis,	do.
Parris,	Parrish Coal Co.,	Plymouth,	H. H. Ashley,	Plymouth, Pa.

TABLE No. 2.—Gives the total number of tons of coal mined and tons of coal shipped in each colliery, number of days worked, number of employés, number of persons killed and injured, number of kegs of powder used, &c., in the Third Anthracite Mining District, for the year ending December 31, 1887.

Names of Collieries.	Location.	Total production in tons of coal.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.
Lehigh and Wilkes-Barre Coal Company:											
1. Diamond,	Wilkes-Barre,	94 525.11	94 143.11	195.50	247	. .	5	2,482	24	34	1
2. Hollenback,	do.	254 56 .11	232.036.16	219 10	578	2	1	6 670	30	40	. .
3. Empire,	do.	249.372.15	246.792 00	197.65	811	2	11	7 001	30	44	2
4. Hartford or Jersey,	Ashley,	123 118.19	119 039.04	184 55	478	3	7	3 983	24	27	1
5. Stanton,	Wilkes-Barre,	273,472 15	266 475.15	220 95	653	3	10	4 649	40	62	1
6. Sugar Notch Shaft,	Sugar Notch,	184,839.11	182.722.11	207.60	620	3	7	6 587	23	45	1
7. Lance or No. 11,	Plymouth,	193 688 17	193 622 17	210 15	560	4	3	6 539	12	40	.
8. Nottingham,	do.	498 014.12	489.479 17	206.55	1.107	3	8	10 284	29	95	2
6. Reynolds,	do.	149 630.14	149.468.04	203.00	533	. . .	3	4,509	13	60	.
10. Wanamie,	Newport township,	151,051.05	149,215.00	207.65	506	. . .	3	5,355	13	56	1
11. South Wilkes-Barre,	Wilkes-Barre,	5,869.12	5 869.00	No breaker	21	. . .	1	. . . .	6	1	.
Totals,		2,178,150.02	2,128 864 15	205.27	6,114	20	59	58,059	244	504	9
Delaware and Hudson Canal Company:											
12. Baltimore Slope,	Wilkes-Barre township,	69 645 00	69,645.00	197.00	263	. .	1	2,484	20	25	. . .
13. Baltimore Shaft,	do. do.										
14. Baltimore Tunnel,	Wilkes-Barre,	132,854 08	130.419.07	222 25	374	2	2	4 623½	18	43	2
15. Conyngham,	do.	84,656.16	83.150.07	195 75	259	. .	11	2 051	14	28	. . .
16. Boston,	Plymouth township,	40 209.06	39,609.06	50.00	322	. .	1	977	9	41	. . .
17. No. 2,	Plymouth,	177,307.11	177,307.11	216.75	443	1	6	5.699	9	53	. .
18. No. 3,	Plymouth township,	223,939.01	222,092 02	234.25	421	2	.	7,159	15	50	. . .
19. No. 4,	Plymouth,	173 801.14	173 801.14	215 00	362	1	2	5,796	12	45	. . .
20 No. 5,	do.	203,732.09	200,129 04	217.25	423	. .	2	5 496	15	57	1
Totals,		1,106,146 05	1,096,15 .11	193.53	2,875	6	25	34 285	112	342	3

Lehigh and Wilkes-Barre Coal Company.—Forty-one thousand six hundred and fifty-five (41,655) tons of the above was Buckwheat coal.

TABLE No. 2—Continued.

Name of Collieries.	Location.	Total production in tons of coal.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.
Susquehanna Coal Company :											
21. No. 1 Slope, Breaker No. 1,	Nanticoke,	188,453 17	1,562,456.04	241.85	431	2	5	39,086	26	39	1
22. Nos. 1 and 4 Tunnel, Breaker No. 1,	do.					1	1				
23. No. 1 Shaft, Breaker No. 2,	do.					2	9				
24. No. 1 Deep Shaft, Breaker No. 2,	do.	460,403.06		246.30	1,474	1	13		86	161	6
25. No. 2 Slope, Breaker No. 2,	do.					3	9				
26. No. 3 Slope or Grand Tunnel,	West Nanticoke,	117,885 04		195.35	310	2	10		29	36	1
27. No. 2 Shaft, Breaker No. 5,	Nanticoke,	514,805.04		245.85	1,104	*2	6		66	166	2
28. No. 4 Slope, Breaker No. 5,	do.						6				
29. Newport Tunnel, Breaker No. 6,	Glen-Lyon,						6				
30. Newport Shaft, Breaker No. 6.	do.	279,982.13		228.20	1,119		5		84	80	1
31. Newport Slope, Breaker No. 6.	do.						1				
Totals,		1,561,530.04	1,562 456.04	231.51	4,438	20	71	39,086	291	482	11
Kingston Coal Company :											
32. No. 1 Shaft,	Edwardsdale,	249,762.15	234,387 01	234.00 / 62.60	594	2	3	6,695	46	57	. .
33. No. 4 Shaft,	do.						3				
34. No. 2 Shaft, Breaker No. 2,	do.	371,559.02	363,507.05	240.65	760	2	3	8,686	39	71	4
35. No. 3 Shaft, Breaker No. 2,	do.					1	7				
36. Gaylord Shaft,	Plymouth,	248,276 10	239,726.00	184.55	532			5,839	29	51	. .
37. Gaylord Slope,	do.						8				
Totals,		869,598 07	837,620.06	219.93	1 886	5	24	21,220	114	179	4
Miscellaneous Coal Companies :											
38. Alden,	Newport township,	263,073.12	255,444.08	261.40	636	2	6	10,065	15	58	.
39. Avondaly,	Plymouth township,	172,589.11	166,168.11	201.00	455	4	4	4,521	26	67	1
40. Woodward,	do. do.	4,464 00	Breaker not ready. .		111	.		272	12	13	.

41. Dodson,	Plymouth,	154 041.00	139.091.00	184.90	369	3	5	5,407	15	42	. . .
42. Dorrance,	Wilkes-Barre,	51,650.06	40,016.11	244.75	136	. .	2	1,982	12	14	1
43. East End,	Mocanaqua,	This colliery did not work.									
44. West End,	do.	172 259.16	152.860.14	264.19	392	. . .	5	5,095	19	43	2
45. Franklin,	Wilkes-Barre,	169,336.10	156 861.15	244 75	505	1	6	3 875	44	47	2
46. Hillman Vein,	do.	97.417 04	75.032.09	247.10	327	1	4	3,716	9	27	. . .
47. Maffet,	Sugar Notch,	136 658.05	136,088 05	206.50	360	3	3	4,101	9	22	. .
48. Parish,	Plymouth,	187,957.06	185,743.11	162.40	617	. .	4	5.832	19	75	. . .
49. Red Ash No. 1,	Wilkes-Barre township,	145 781.06	145,781.06	194.65	308	. .	4	4,365	6	29	. .
50. Red Ash No. 2,	do. do.	177,712 01	175.120.01	207 05	365	. . .	7	5,242	5	31	. . .
51. Warrior Run,	Hanover township,	92,388.12	80,854.12	202.25	260	. .	1	1,996	24	20	. . .
Total,		1,825,329.09	1,709,043.03	†218 41	4,841	14	51	56,469	215	488	6

RECAPITULATION.

Lehigh and Wilkes-Barre Coal Company,	2,178 150.02	2,128.864.15	205.27	6,114	20	59	58,059	244	504	9
Delaware and Hudson Canal Company,	1,106,146.05	1,096,154.11	193.53	2 875	6	25	34,285½	112	342	3
Susquehanna Coal Company,	1,561.530.04	1,562,456 04	231.51	4,438	20	71	39.086	291	482	11
Kingston Coal Company,	869,598.07	837.620 06	219 93	1,886	5	24	21,220	114	179	4
Miscellaneous Coal Companies,	1,825,329.09	1,709,043.03	218.41	4,841	14	51	56,469	215	488	6
Totals,	7,540,754.07	7,334,138.19	†213.73	20,154	65	230	209,119½	976	1,995	33

One non-fatal accident was reported from the No. 10 Slope Sugar Notch, and one from the Salem Colliery, adding which, makes the total of non-fatal accidents equal two hundred and thirty-two.
The culm used at the mines is not included in these tables.

*One of these occurred in the carpenter-shop.
†Average.

TABLE No. 3.—Showing the number of each class of employés at each colliery in the Third Anthracite Mine District, during the year 1887.

NAMES OF COLLIERIES.	LOCATION—All in Luzerne County.	NUMBER OF PERSONS EMPLOYED INSIDE.							NUMBER OF PERSONS EMPLOYED OUTSIDE.							Grand totals—inside and outside.
		Inside foreman or mine boss.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Doorboys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All company men.	Superintendent, book-keepers and clerks.	Total outside.	
Lehigh and Wilkes-Barre Coal Co.:																
1. Diamond,	Wilkes-Barre,	1	40	23	42	21	14	141	1	3	10	48	43	1	106	247
2. Hollenback,	do.	1	134	134	56	35	30	390	1	4	19	107	56	1	188	578
3. Empire,	do.	1	160	160	61	70	25	477	1	2	13	220	97	1	334	811
4. Hartford or Jersey,	Ashley,	1	109	73	51	15	17	266	1	4	15	138	53	1	212	478
5. Stanton,	Wilkes-Barre,	1	128	140	41	78	30	418	1	3	23	153	54	1	235	653
6. Sugar Notch Shaft,	Sugar Notch,	1	126	131	75	34	31	398	1	5	11	135	69	1	222	620
7. Lance No. 11,	Plymouth,	1	130	100	58	41	26	356	1	4	9	151	38	1	204	560
8. Nottingham,	do.	1	296	180	108	97	53	735	1	6	10	279	75	1	372	1,107
9. Reynolds,	do.	1	117	120	38	43	37	356	1	3	7	120	45	1	177	533
10. Wanamie,	Newport township,	1	138	115	38	41	16	349	1	5	12	85	53	1	157	506
11. South Wilkes-Barre,	Wilkes-Barre,	1	....	....	....	....	....	1	..	2	3	....	15	....	20	21
Totals,		11	1,378	1,176	568	475	279	3,887	10	41	132	1,436	598	10	2,227	6,114
Delaware and Hudson Canal Co.:																
12. Baltimore Slope,	Wilkes-Barre township,	2	40	40	62	....	2	146	1	5	9	64	38	....	117	263
13. Baltimore Shaft,	do. do.															
14. Baltimore Tunnel,	Wilkes-Barre,	1	70	65	34	31	8	209	1	6	13	105	37	3	165	374
15. Conyngham,	do.	1	42	42	42	26	7	160	1	3	8	60	25	2	99	259
16. Boston,	Plymouth township,	1	66	66	37	32	14	216	1	4	8	52	40	1	106	322
17. No. 2,	Plymouth,	2	86	86	55	54	21	304	1	6	11	80	39	2	139	443
18. No. 3,	do.	2	102	102	40	49	30	325	1	3	7	63	29	1	104	429
19. No. 4,	do.	1	87	83	36	43	18	268	2	4	10	46	30	2	94	362
20. No. 5,	do.	1	93	82	69	44	33	322	1	6	10	54	28	2	101	423
Totals,		11	586	566	375	279	133	1,950	9	37	76	524	266	13	925	2,875
Susquehanna Coal Company:																
21. No. 1 Slope, Breaker No. 1,	Nanticoke,	1	92	110	17	31	14	265	1	9	6	79	70	1	166	431
22. Nos. 1 and 4 Tunnel, Breaker No. 1,	do.															
23. No. 1 Shaft,	do.															
24. No. 1 Deep Shaft, Breaker No. 2,	do.	3	260	500	117	136	54	1,070	1	17	30	165	190	1	404	1,474
25. No. 2 Slope, Breaker No. 2,	do.															

26. No. 3 Grand Tunnel,	West Nanticoke,	1	58	49	31	12	6	157	1	5	6	99	41	1	153	310
27. No. 2 Shaft, Breaker No. 5,	Nanticoke,	2	225	385	84	100	49	845	1	9	17	143	87	2	259	1,104
28. No. 4 Slope, Breaker No. 5,	do.															
29. Newport Tunnel, Breaker No. 6,	Glen Lyon,	2	275	375	34	61	17	764	1	15	14	245	78	2	355	1,119
30. Newport Shaft, Breaker No. 6,	do.															
31. Newport Slope, Breaker No. 6,	do.															
Totals,		9	910	1,419	288	340	140	3,101	5	55	73	731	466	7	1,337	4,438
Kingston Coal Company:																
32. No. 1 Shaft,	Edwardsdale,	3	138	126	47	49	28	391	1	6	11	133	43	9	203	594
33. No. 4 Shaft,	do.															
34. No. 2 Shaft,	do.															
35. No. 3 Shaft,	do.	2	190	170	44	58	40	504	2	13	17	165	57	2	256	760
36. Gaylord Shaft,	Plymouth,															
37. Gaylord Slope,	do.	2	140	55	28	58	8	291	2	10	12	160	55	2	241	532
Totals,		7	468	351	119	165	76	1,186	5	29	40	458	155	13	700	1,886
Miscellaneous Coal Companies:																
38. Alden,	Newport township,	1	160	131	73	61	15	441	1	7	10	123	48	6	195	636
39. Avondale,	Plymouth township,	2	99	103	43	46	10	303	1	31	8	90	22	....	152	455
40. Woodward,	do.	1	20	14	18	....	....	53	1	4	8	....	45	....	58	111
41. Dodson,	Plymouth,	1	85	60	56	33	15	250	1	8	9	49	50	2	119	369
42. Dorrance,	Wilkes-Barre,	1	21	19	14	13	3	71	1	4	6	22	29	3	65	136
43. East End,	Mocanaqua,	Did	not wo	rk.												
44. West End,	do.	1	115	75	20	52	5	268	3	5	6	57	50	3	124	392
45. Franklin,	Wilkes-Barre,	1	90	66	60	26	21	264	1	10	17	77	134	2	241	505
46. Hillman Vein,	do.	1	75	79	29	27	28	239	1	4	8	51	21	3	88	327
47. Maffet,	Sugar Notch,	1	70	70	10	13	11	175	1	6	5	125	46	2	185	360
48. Parrish,	Plymouth,	2	138	138	88	56	22	394	1	4	9	144	62	3	223	617
49. Red Ash No. 1,	Wilkes-Barre township,	1	82	63	15	27	7	195	1	5	5	54	46	2	113	308
50. Red Ash No. 2,	do. do.	1	94	89	18	31	9	242	1	5	3	60	52	2	123	365
51. Warrior Run,	Hanover township,	1	81	77	12	15	8	194	1	5	8	35	15	2	66	260
Totals,		15	1,130	984	406	400	154	3,089	15	98	102	887	620	30	1,752	4,841

RECAPITULATION.

Lehigh and Wilkes-Barre Coal Company,	11	1,373	1,176	568	475	279	3,887	10	41	132	1,436	598	10	2,227	6,114
Delaware and Hudson Canal Company,	11	586	566	375	279	133	1,950	9	37	76	524	266	13	925	2,875
Susquehanna Coal Company,	9	910	1,419	283	340	140	3,101	5	55	73	731	466	7	1,337	4,438
Kingston Coal Company,	7	468	351	119	165	76	1,186	5	29	40	458	155	13	700	1,886
Miscellaneous Coal Company,	15	1,130	984	406	400	154	3,089	15	98	102	887	620	30	1,752	4,841
Totals,	53	4,472	4,496	1,751	1,659	782	13,213	44	260	423	4,036	2,105	73	6,941	20,154

TABLE 4.—List of fatal accidents occurring in and about the mines of the Third Anthracite Mine District, for the year ended December 31, 1887.

Date of accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Widow.	No. of children.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Jan. 9	1	Michael Slocum,	Watchman,	72	..	..	Avondale,	Luzerne,	Fatally injured by a fall.
25	2	Michael Sweeney,	Miner,	24	..	..	Maffet,	do.	Killed by a fall of coal.
31	3	James Tully,	do.	40	..	..	do.	do.	Killed by a fall of rock.
Feb. 7	4	James Hayes,	Chute tender,	14	..	..	Standard Breaker,	do.	Smothered by being drawn into a coal chute.
17	5	Albert Doerling,	Miner,	37	1	6	Shaft No. 2,	do.	Killed by a fall of coal.
18	6	Thomas Billbow,	Laborer,	50	1	6	do.	do.	Fatally injured by a fall of rock.
19	7	George Lewis,	Door tender,	14	..	..	Shaft No. 9,	do.	Fatally injured; crushed by a car.
26	8	John Blewitt,	Miner,	55	1	6	Stanton,	do.	Killed by a fall of coal.
Mar. 5	9	John Tichler,	do.	42	1	4	Shaft No. 4,	do.	Killed by a fall of rock.
10	10	John Holleran,	Driver,	17	..	..	Franklin Slope,	do.	Fatally injured by being crushed by a car.
16	11	Christian Conrad,	Miner,	54	1	2	Hollenback,	do.	Fatally injured by a fall of coal.
18	12	Edward Williams,	Laborer,	25	1	2	Baltimore Tunnel,	do.	Killed by a fall of rock.
26	13	James Owitski,	do.	21	..	..	..	do.	Killed by a fall of rock.
Apr. 2	14	Richard Williams,	Brattice man,	54	..	3	Slope No. 3,	do.	Killed by an explosion of gas.
4	15	Michael Cosmar,	Laborer,	28	..	.	Lance No. 11,	do.	Killed by a fall of rock.
8	16	Michael Molloy,	do.	23	..	..	Shaft No. 1,	do.	Killed by a fall of rock.
19	17	John Butch,	do.	23	..	..	Newport Tunnel,	do.	Killed by a fall of rock.
11	18	Thomas L. Morgan,	Outside foreman,	56	1	..	Breaker No. 1,	do.	Killed by being crushed by cars.
May 11	19	Arthur McGeer,	Laborer,	40	1	6	Avondale,	do.	Found dead in the mines.
17	20	William D. Walters,	Engineer,	47	1	7	Breaker No. 2,	do.	Killed by being run over by cars.
18	21	William E. Griffiths,	Fire boss,	55	1	3	Alden,	do.	Fatally injured by being crushed between cars.
27	22	Daniel Hannegan,	Miner,	48	1	8	Shaft No. 3,	do.	Killed by a fall of rock.
June 4	23	Owen Reynolds,	Laborer,	22	..	..	Empire,	do.	Killed by a fall of coal.
6	24	Owen Lloyd,	Miner,	60	1	3	Jersey,	do.	Killed by a fall of coal.
17	25	Frank Latkofski,	do.	31	1	1	Tunnel No. 4,	do.	Fatally injured by a fall of coal.
20	26	John Jones,	Slate picker,	14	..	..	Breaker No. 2,	do.	Crushed to death by being caught in screen.
23	27	John McManaman,	Miner,	34	1	2	Slope No. 4,	do.	Killed by explosion of gas.
23	28	James Kealy,	Laborer,	26	..	..			
23	29	Latsy Verbine,	do.	28	..	..			
24	30	Henry Jones,	Docking boss,	25	..	.	Lance No. 11,	do.	Killed by being crushed by machinery.
27	31	Michael Donahue,	Laborer,	25	..	..	Newport Slope,	do.	Fatally injured by fall of clay.
July 6	32	Alexander Dwyer,	Miner,	47	1	8	Newport Shaft,	do.	Killed by machinery.
18	33	Charles Zerman,	No employee,	25	..	..	Stanton,	do.	Crushed to death by being caught by cage.
22	34	John Birch,	Laborer,	25	1	..	Hillman Vein,	do.	Killed by coal from a blast.

Aug. 1	35	David Davies,	Miner,	53	1	4	Nottingham,	do.	Killed by a fall of coal.
1	36	John P. Jones,	Laborer,	25	1	2	Shaft No. 1. Forge Vein,	do.	Killed by a fall of rock.
10	37	Levi Davenport,	Door tender,	15	.	.	Slope No. 3,	do.	Killed by a car.
2	38	John Coralus,	Runner,	20	.	.	Slope No. 1,	do.	Killed by being crushed between cars.
27	39	Thomas Martin,	Laborer,	24	.	.	Shaft No. 9,	do.	Killed by a fall of coal.
Sept. 5	40	Richard McGwire,	Miner,	35	1	6	Nottingham,	do.	Killed by a fall of coal.
16	41	William Makowski,	Laborer,	28	1	.	Dodson,	do.	Killed by coal from blast.
20	42	John Mediolla,	Driver,	18	.	.	Slope No. 2,	do.	Killed by being kicked by a mule.
24	43	Edwin Lewis,	do.	16	.	.	Shaft No. 9,	do.	Killed by a fall of rock.
28	44	Batistus Dotto,	Miner,	30	.	.	Newport Tunnel,	do.	Killed by being run over by a car.
Oct. 13	45	Watkin Williams,	Helper,	17	.	.	Jersey,	do.	Killed by being crushed by a car.
14	46	John Kakalecic,	Miner,	37	1	6	Dodson,	do.	Killed by a fall of rock.
19	47	Patrick Ward,	Laborer,	23	1	.	Avondale,	do.	Killed by a fall of coal.
21	48	John Shippal,	do.	34	1	4	Slope No. 2,	do.	Killed by a fall of rock.
21	49	Audrew Cosmella,	Door tender,	60	1	3	Lance No. 11,	do.	Crushed to death by gangway cage.
26	50	James Thomas,	Miner,	42	1	6	Nottingham,	do.	Fatally burned by explosion of gas.
27	51	Fred. Rudick,	do.	56	1	.	Shaft No. 1. Forge Veln,	do.	Crushed to death by a car.
31	52	James Ferry,	Laborer,	27	1	.	Baltimore Tunnel,	do,	Killed by a fall of coal.
Nov. 4	53	Charles Bertram,	do.	20	1	.	Hollenback,	do.	Crushed to death by a car.
5	54	Hugh Brislin,	Miner,	60	1	11	Jersey,	do.	Fatally burned by an explosion of powder.
9	55	Michael Gleason,	Driver,	18	.		Shaft No. 3,	do.	Killed by being crushed by a car.
10	56	Stephen Marklnock,	Laborer,	26	1	1	Breaker No. 1,	do.	Killed by being crushed by a car.
16	57	William R. Powell,	Miner,	42	1	3	Dodson,	do.	Killed by a fall of roof.
21	58	August Josupic,	Carpenter,	41	1		Carpenter Shop,	do.	Killed by rupturing a blood vessel.
25	59	Evan Roberts,	Miner,	32	1	3	Shaft No. 1, Lee Veln,	do.	Killed by being crushed between cars.
28	60	Patrick Kinnahan,	Laborer,	26	.	.	Maffet,	do.	Killed by a fall of coal.
28	61	Evan Thomas,	Driver,	20	.	.	Lance No. 11,	do.	Fatally injured by being kicked by a mule.
Dec. 7	62	William Buckley,	do.	15	.	.	Avondale,	do.	Killed by being run over by a car.
9	63	William Stone,	Door boy,	15	.	.	Shaft No. 2,	do.	Killed by being crushed by a car.
29	64	Michael Motska,	Slate picker,	25	.	.	Alden Breaker,	do.	Killed by suffocation.

RECAPITULATION.

Occupations:

Miners,	21
Laborers,	21
Drivers and runners,	8
Door tenders,	4
All other causes,	11
Total,	65

Nationality:

Welsh,	16
Irish,	16
Americans,	7
English,	6
Polish,	7
Hungarian,	8
German,	4
Italian,	1
Total,	65

Causes of the accidents:

By explosions of gas,	6
By falls of roof and coal,	27
By falling down shafts,	0
Crushed and run over by mine cars,	11
By explosions of powder and blasts,	3
By miscellaneous causes inside of mines,	7
By miscellaneous causes outside of mines,	11
Total,	65

TABLE No. 5.—List of non-fatal accidents occurring in and about the mines of the Third Anthracite Mine District for the year ended December 31, 1887.

Date of accident.	No. of accident.	Name of Person.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location. Luzerne county.	Nature and Cause of Accident.
Jan. 3,	1	John Thomas,	Car oiler,	17	No,		Shaft No. 2,	Edwardsville,	Foot crushed under railroad cars ou surface, necessitating amputation.
8,	2	Albert Thomson,	Miner,				Salem,	Shickshinny,	Bruised and cut slightly by a fall of coal.
10,	3	Joseph Onusko,	Headman,	34	Yes,	2	Breaker No. 1,	Edwardsville,	Leg broken in two places by a car running upon it.
11,	4	William Titus,	Runner,	21	No,		West End,	Mocanaqua,	Back painfully injured by a fall of slate.
20,	5	Lewis Davies,	Miner,	24	No,		Stanton,	Wilkes-Barre,	Big toe severely cut by a lump of coal sliding on it.
20,	6	Daniel Mainwaring,	Laborer,	23	No,		Shaft No. 4,	Edwardsville,	Little toe crushed by a fall of rock.
22,	7	David Martin,	Driver,	18	No,		Shaft No. 1,	do.	Slightly hurt by being caught between a car and rib.
22,	8	Deunis Mack,	do.	14	No,		Parrish,	Plymouth,	Small bone of leg fractured, caught between cars on surface.
25,	9	John Griffiths,	Miner,	24	Yes,	1	Newport Tunnel,	Glen-Lyon,	Jaw bone fractured and severely cut on head by a fall of top coal.
25,	10	P. J. Caffrey,	do.	30	No,		Maffet,	Sugar Notch,	Jaw bone fractured by a fall of rock.
27,	11	David Williams,	Slate-picker,	13	No,		Stanton,	Wilkes-Barre,	Fell from a platform in the breaker and was severely injured.
28,	12	John Mayers,	Miner,	35	Yes,	2	do.	do.	Leg fractured below the knee by a fall of slate.
28,	13	James McBride,	Laborer,	25	No,		Red Ash No. 2,	Wilkes-Barre township,	Back bruised and cut on head by a fall of rock.
Feb. 1,	14	John D. Daniels,	Miner,	48	Wid.,	4	Shaft No. 1, Lee Vein,	Nanticoke,	Daniels was severely burned and the other two slightly, by an explosion of gas.
1,	15	David H. Williams,	Laborer,	30	Yes,				
1,	16	John E. Williams,	do.	27	Yes,				
2,	17	William Barnett,	Miner,	45	Wid.,		West End,	Mocanaqua,	Painfully injured by being crushed between a car and rib.
4,	18	Robert Dillon,	Pump runner,	34	Yes,	1	Franklin,	Wilkes-Barre,	Hip painfully bruised by coal falling on him.
5,	19	Stanis Garskanski,	Miner,	32	Yes,	2	Slope No. 3,	West Nanticoke,	Face and hands badly burned by an explosion of gas.
7,	20	William Seriks,	Laborer,	30	No,		Lance No. 11,	Plymouth,	Face and hands burned by an explosion of powder.
8,	21	Joseph James,	Driver,	21	No,		Stanton,	Wilkes-Barre,	Leg broken in two places, caugbt between a car and door.
10,	22	Michael Collobob,	Miner,	28	Yes,	3	Newport Shaft,	Glen-Lyon,	Two ribs fractured aud body bruised by a fall of fire-clay roof.

10,	23	Martin Polobis,	do.	27	No,		Newport Shaft,	Glen-Lyon,	Faces and hands slightly burned by an explosion of gas, caused by a fall of coal bringing it down on their lamps.
10,	24	John Polobis,	Laborer,	25	No,				
12,	25	John Hunragy,	do.	32	Yes,		Breaker No. 4,	Edwardsville,	Back severely sprained by a car, which was half on the cage, tipping upon him.
12,	26	W. G. Williams,	Door-tender,	16	No,		Shaft No. 3,	do.	Struck his head against the roof while riding on a car and was severely hurt.
12,	27	Burnett White,	Runner,	21	No,		Hillman Vein,	Wilkes-Barre,	Severely bruised; was caught between two cars.
15,	28	Frederick Sprow,	Ash-wheeler,	38	No,		Dorrance,	do.	Face slightly scalded by steam escaping from a burst pipe.
16,	29	David James,	Driver,	17	No,		Shaft No. 2,	Plymouth,	Compound fracture of leg, caused by falling under cars.
17,	30	Evan T. Williams,	Miner,	35	Yes,	1	Slope No. 2,	Nanticoke,	Jaw bone fractured, eye destroyed and face severely bruised by a premature blast.
17,	31	James O. Boyle,	do.	40	Yes,	3	Conyngham,	Wilkes-Barre,	Severely cut on head by a fall of coal.
17,	32	George W. Richards,	Slate-picker,	14	No,		Breaker No. 2,	Plymouth,	Leg severely lacerated by falling on a revolving screen.
17,	33	Robert T. Williams,	Door-tender,	16	No,		Jersey,	Ashley,	Leg painfully burned; his pants, saturated with oil, took fire from his lamp.
19,	34	Daniel Sheehan,	Miner,	45	Yes,	7	Diamond,	Wilkes-Barre,	Thigh fractured by falling while running from a blast.
21,	35	John Sheridan,	do.	31	Yes,	2	Avondale,	Plymouth township,	Face and hands slightly burned by an explosion of powder.
24,	36	John Polneazick,	do.	30	Yes,	5	Alden,	Alden,	Severe scalp wound and bruises on body, caused by coal flying from a blast.
25,	37	Patrick Doyle,	Culm-driver,	16	No,		Breaker No. 4,	Plymouth,	Nose broken and cut on face and leg by being struck by a mule.
25,	38	David W. Davies,	Miner,	33	Yes,	5	Gaylord,	do.	Bruised severely about his hips by a fall of roof.
Mar. 1,	39	John Gallagher,	do.	48	Yes,	1	Alden,	Alden,	Both legs broken by a fall of rock from roof.
7,	40	John Harris,	Laborer,	28	No,		Gaylord,	Plymouth,	Back painfully injured by a fall of coal.
8,	41	William Wilson,	do.	45	No,		West End,	Mocanaqua,	Arm crushed by a fall of coal, necessitating amputation.
9,	42	David Lloyd,	Miner,	28	No,		Shaft No. 2,	Nanticoke,	Ankle sprained and cut about head and face, caused by a fall of rock.
11,	43	John Bennett,	do.	28	No,		Diamond,	Wilkes-Barre,	Face and head cut and bruised by a premature blast.
14,	44	Jacob Clup,	Laborer,	23	No,		Dodson,	Plymouth,	Wrist broken by a fall of rock.
15,	45	Fred Tyler,	do.	24	No,		Conyngham,	Wilkes-Barre,	Face and hands slightly burned by an explosion of gas.
16,	46	Henry Jenkins,	do.	27	Yes,	3	Gaylord,	Plymouth,	Squeezed between cars—painfully hurt.
16,	47	Stephen Snyder,	Miner,	55	Yes,	6	Conyngham,	Wilkes-Barre,	By using naked lights where prohibited, a quantity of gas, which accumulated through neglecting to close a door, ignited and exploded, burning them slightly—Snyder on his hands, Blume on back and arms, Theiman on face, hands and back, and Schneider on hands.
16,	48	William Blume,	Laborer,	22	No,				
16,	49	William Theiman,	do.	24	No,				
16,	50	Jacob Schneider,	Miner,	53	Yes,	4			
16,	51	Owen Davies,	do.	28			Shaft No. 3,	Edwardsville,	Both badly cut about their head by a fall of coal.
16,	52	William Judge,	Laborer,	21					
17,	53	Christopher Smoke,	Miner,	47	No,		Nottingham,	Plymouth,	Thigh broken by coal rolling upon him.
18,	54	Thomas Williams,	do.	32	No,		Red Ash No. 2,	Wilkes-Barre township,	Arm dislocated by a fall of rock.

TABLE No. 5—Continued.

Date of accident.	No. of accident.	Name of Person.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location. Luzerne county.	Nature and Cause of Accident.
Mar. 21,	55	William Foley, ...	Driver, ...	16	No, .	. . .	Red Ash No. 1, ...	Wilkes-Barre township,	Back bruised and severely cut on head by being dragged by a mule.
21,	56	William Carver, ...	do. . . .	16	No, .	. . .	Shaft No. 2, ...	Plymouth, ...	Leg broken; a mule struck him with his head.
22,	57	Thomas W. Roberts, .	Miner, ...	24	Yes, .	2	Slope No. 2, ...	Nanticoke, ...	Back painfully hurt by a fall of fire-clay from roof.
22,	58	James Thomas, ...	Laborer, . . .	19	No, .	. . .	Shaft No. 2, ...	Plymouth, ...	Right leg broken by a fall of rock.
25,	59	John Judge, ...	do. . . .	22	No, .	. .	Shaft No. 3, ...	Edwardsville, ...	Both were slightly burned by an explosion of gas.
25,	60	Michael Costello, . . .	do. . . .	25	No, .	. .			
25,	61	Albert Hamill, ...	Miner, ...	24	No, .	. . .	do.	do.	Two severe cuts on head and knee bruised by a fall of coal.
25,	62	Con. O. Boyle, ...	Driver, ...	17	No, .	. . .	Dodsou, ...	Plymouth, ...	Several teeth kicked out by a mule.
25,	63	John Mattes, ...	Laborer, . . .	23	No, .	. . .	Stanton, ...	Wilkes-Barre, ...	Bruised on head, arm and leg by a fall of coal.
31,	64	Thomas Thomas, . . .	Door-tender, .	15	No, .	. . .	Shaft No. 3, ...	Edwardsville, ...	Thigh broken, ankle dislocated and arm hurt by falling under cars.
April 1,	65	James Hammil, ...	Timber-man,	44	Yes, .	2	Slope No. 10, ...	Sugar Notch, ...	Bone in foot fractured by a fall of rock.
2,	66	Morgan Thomas, . . .	Runner, . . .	17	No, .	. . .	Jersey, ...	Ashley, ...	Arm broken by a car jumping off the track and running upon him.
4,	67	Frank Rowitskey, . . .	Laborer, . . .	20	No, .	. . .	Lance No. 11, ...	Plymouth, ...	Leg broken and otherwise injured by a fall of rock.
6,	68	Thomas McCue, ...	Miner, ...	45	Yes, .	7	Franklin, ...	Wilkes-Barre, ...	Some of his ribs fractured and right arm bruised by a fall of coal.
6,	69	Joseph Ruttofski, . . .	Laborer, . . .	32	Yes, .	5	Slope No. 3, ...	West Nanticoke, ...	Painfully bruised by being crushed by a car.
7,	70	John Valoy, ...	Miner, ...	38	No, .	. . .	Shaft No. 2, ...	Nanticoke, ...	Face and hands burned by an explosion of gas.
13,	71	John X. Jones, ...	Driver, ...	20	No, .	. . .	Gaylord, ...	Plymouth, ...	Squeezed between cars; painfully injured about his hips.
19,	72	John Pringle, ...	Plane-runner,	24	No, .	. . .	do.	do.	Two ribs fractured by a car jumping the track and running upon him.
20,	73	John Menshon, ...	Driver, ...	18	No, .	. . .	Alden, ...	Alden, ...	One leg broken and the other severely wounded by being run over by a car.
20,	74	Paul Lavinski, ...	Laborer, . . .	36	Yes, .	3	Lance No. 11, ...	Plymouth, ...	Leg broken near ankle by being caught between cars.
20,	75	John Murphy, ...	Driver, ...	19	No, .	. . .	Shaft No. 9, ...	Sugar Notch, ...	Leg broken at the ankle; caught between cars.
26,	76	Robert Prichard, . . .	Miner, ...	. . .	Yes, .	. .	Jersey No. 8, ...	Ashley, ...	Leg broken by coal rolling upon him.
28,	77	Thomas Costello, . . .	Slate-picker, .	14	No, .	. . .	Jersey Breaker, ...	do.	Foot badly lacerated; caught in the elevator gearing.

	29,	78	John Geake,	Miner,	27	No,	Shaft No. 2,	Plymouth,	Back and left leg bruised by a fall of rock.
May	3,	79	Edward Morris,	Driver,	17	No,	Slope No. 3,	West Nanticoke,	Caught between a car and mule; injured quite seriously.
	4,	80	William Knight,	Miner,	30	Yes, 2	Slope No. 4,	Nanticoke,	Painfully hurt about head and body by a fall of bone coal.
	6,	81	Andrew ——,	Laborer,	25	No,	Slope No. 2,	do.	Leg broken by a fall of fire-clay roof.
	7,	82	Herman Lutz,	Miner,	30	Yes, 4	Shaft No. 2,	Plymouth,	One rib fractured and bruised on back and on abdomen by a fall of rock.
	7,	83	Stephen Latze,	Ash-wheeler,	30	No,	Dorrance,	Wilkes-Barre,	Face scalded by steam arising from throwing water on hot ashes.
	7,	84	Christmas Noss,	Miner,	41	Yes, 4	Slope No. 3,	West Nanticoke,	Face and hands severely burned by an explosion of gas.
	10,	85	Jacob Brodolar,	Laborer,	22	No,	Shaft No. 1, Forge Vein,	Nanticoke,	Head and shoulder severely bruised by a fall of slate.
	11,	86	Michael Visnifski,	do.	26	Yes,	do. do.	do.	One rib fractured and back bruised by a fall of slate from roof.
	12,	87	Patrick Boyle,	do.	24	No,	West End,	Mocanaqua,	Injured quite painfully by a fall of rock.
	12,	88	Richard Roberts,	Miner,	25	No,	Empire,	Wilkes-Barre,	Leg broken by a fall of coal.
	23,	89	Evan J. Griffiths,	do.	35	No,	Newport Shaft,	Glen-Lyon,	Leg broken, skull fractured and severely bruised on body by falling eighty feet.
	26,	90	John Cosgrove,	do.	27	No,	Slope No. 1,	Nanticoke,	Face and hands severely burned. Gas exploded from his lamp.
	26,	91	Andrew Shinefski,	Laborer,	25	No,	do.	do.	Face and arms slightly burned. Gas exploded from his lamp.
	26,	92	Hugh McFadden,	Driver,	16	No,	Shaft No. 2,	do.	Fell and broke his leg.
	26,	93	William Stonier,	Miner,	30	Yes, 2	Newport Tunnel,	Glen-Lyon,	Leg broken by a fall of coal.
	28,	94	William Chipanes,	No employee,	24	No,	Red Ash No. 2,	Wilkes-Barre township,	Leg broken below knee by a fall of coal.
	30,	95	James Monahan,	Driver,	15	No,	Shaft No. 5,	Plymouth,	Severely bruised by being caught under cars.
June	3,	96	John Frank,	Laborer,	21	No,	Shaft No. 1, Forge Vein,	Nanticoke,	Right leg fractured by a fall of slate.
	3,	97	Charles Buraski,	Miner,	45	Yes,	Tunnel No. 4,	do.	Shoulder joint dislocated; caught between a car and prop.
	4,	98	Owen J. Williams,	do.	30	Yes,	Empire,	Wilkes-Barre,	Leg crushed by a fall of coal, necessitating amputation.
	4,	99	Michael McGovern,	do.	25	No,	Shaft No. 1, Lee Vein,	Nanticoke,	Severely injured on his body by coal from a blast.
	6,	100	John Novice,	do.	45	Yes,	Empire,	Wilkes-Barre,	Leg broken by coal falling upon him.
	10,	101	Thomas Anthony,	do.	24	Yes,	Avondale,	Plymouth township,	Cut on head and shoulder by coal from a blast.
	13,	102	Henry Jones,	Laborer,	25	Yes, 3	Jersey No. 8,	Ashley,	Severely cut on head by a fall of rock.
	14,	103	Joseph Laskofski,	do.	32	Yes, 2	Alden,	Alden,	Hip and side cut and bruised by coal from a blast.
	14,	104	Richard White,	Miner,	43	Yes,	Shaft No. 1, Forge Vein,	Nanticoke,	Hip dislocated by a fall of slate.
	17,	105	Richard Jones,	Driver,	19	No,	Red Ash No. 1,	Wilkes-Barre township,	Arm fractured; caught between two cars
	23,	106	Barney Lisviski,	do.	17	No,	Slope No. 4,	Nanticoke,	Both severely burned and bruised by an explosion of gas.
	23,	107	Joseph Lisviski,	Door-tender,	15	No,			
	23,	108	Charles Smith,	Miner,	45	Yes, 4	Slope No. 3,	West Nanticoke,	Bruised and cut about head and face by a premature blast.
	30,	109	Frank Proshinski,	Driver,	24	No,	Dirt Plane,	Nanticoke,	Back severely hurt; run over by cars.
July	2,	110	Joseph Kashowa,	Laborer,	22	No,	Newport Shaft,	Glen-Lyon,,	Thigh broken by a fall of coal.
	2,	111	Mathew Farach,	do.	27	No,	Dodson,	Plymouth,	Leg broken by a car running back upon him.
	5,	112	Michael Flanery,	Headman,	27	No,	Stanton,	Wilkes-Barre,	Leg badly bruised by falling under a car.
	6,	113	William Simous,	Miner,	45	Yes,	Diamond,	do.	Faces and hands burned by an explosion of gas.
	6,	114	Darby Tooie,	do.	40	Yes,	do.	do.	
	9,	115	Thomas Melia,	do.	30	Yes, 1	Shaft No. 1,	Edwardsville,	Painfully hurt by a fall of roof.

TABLE No. 5—Continued.

Date of accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location. Luzerne county.	Nature and Cause of Accident.
July 9,	116	William Medley,	Laborer,	21	No,		Newport Tunnel,	Glen-Lyon,	Both legs broken and severely cut on side by a fall of rock.
12,	117	Nathan D. Kusterbauer,	Miner,	28	No,		Shaft No. 5,	Plymouth,	Face and hands severely burned by an explosion of powder.
12,	118	Joseph Coynyngham,	Laborer,	38	Yes,	1	Franklin,	Wilkes-Barre,	Both were painfully hurt by a fall of rock.
12,	119	David Edwards,	Miner,	37	Yes,	3			
13,	120	James Leonard,	do.	33	Yes,	5	Conyngham,	do.	Drove a pick through his foot.
13,	121	William Loftus,	Driver,	19	No,		Nottingham,	Plymouth,	Leg broken; caught between a car and a door.
14,	122	George Brown,	do.	16	No,		Breaker No. 1,	Nanticoke,	Foot crushed by falling under a car.
14,	123	James Haslam,	Miner,	35	Yes,		Diamond,	Wilkes-Barre,	Right arm broken by a fall of rock.
16,	124	Tudor Morgan,	Footman,	26	No,		Hollenback Breaker,	do.	Leg broken by a runaway car, which threw him over a trestling.
18,	125	William Clark,	Fireman,	20	No,		Breaker No. 1,	Nanticoke,	Fore finger cut off by a circular saw.
24,	126	Ed. Seberts,	Miner,	37	Yes,	6	No. 1 Deep Shaft,	Nanticoke,	The first two were severely burned and the other slightly by an explosion of gas; the gas fired from a shot which had been charged with dynamite and a small portion of powder; the latter was used against orders and resulted in the explosion.
24,	127	Anthony Broski,	Laborer,	36	Yes,	3			
24,	128	George Phillips,	do.	22	No,				
25,	129	John Morris,	Miner,	31	Yes,		Red Ash No. 2,	Wilkes-Barre township,	Leg broken and badly cut on head, face and hands by a fall of coal.
25,	130	John McDonald,	Carpenter,	27	Yes,	1	Conyngham,	Wilkes-Barre,	Cut his foot severely with an axe.
25,	131	Anning Fairchilds,	Brakeman,				Breaker No. 2,	Nanticoke,	Badly bruised by a car running upon him.
27,	132	Enos Latinas,	Miner,	27	No,		Newport Tunnel,	Glen-Lyon,	Leg broken; caught between lumps of coal.
28,	133	Jenkin Thomas,	Driver,	16	No,		No. 1 Deep Shaft,	Nanticoke,	Arm severely cut by falling under cars.
29,	134	George Saylor,	Laberer,	26	No,		do.	do.	Face and hands slightly burned by an explosion of gas.
Aug. 1,	135	William Luke,	Miner,	46	Yes,		Shaft No. 1, Forge Vein,	do.	Jaw bone broken and severely cut on head by a fall of rock.
8,	136	Anthouy Velancarage,	Miner,	41	Yes,	1	Newport Tunnel,	Glen-Lyon,	Leg and arm fractured by a car running upon him.
9,	137	John Dunks,	Door-tender,	18	No,		Slope No. 2,	Nanticoke,	Hips severely squeezed between cars.
16,	138	Owen Woods,	do.	15	No,		Red Ash No. 1,	Wilkes-Barre township,	Arm broken by a piece of timber striking him while it was being unloaded.
16,	139	Peter McLaughlin,	Driver,	18	No,		Avondale,	Plymouth township,	Hips painfully hurt; was squeezed between a car and rib.

17,	140	Martees Barash, ...	Miner, ...	40	Yes, .	. . .	Shaft No. 2, ...	Edwardsville, ...	Leg broken by a blast.
22,	141	William Gulster, . . .	Door-boy, . .	15	No, .	. . .	do.	Nanticoke, ...	Leg broken by being caught between cars.
26,	142	George Ery, ...	Miner, ...	50	Yes, .	3	Gaylord, ...	Plymouth, ...	Both arms broken, facial bones fractured and body injured by a premature blast.
27,	143	Llewelyn Tiner, ...	do. . . .	33	Yes, .	4	Shaft No. 9, ...	Sugar Notch, ...	Back painfully hurt by a fall of boney coal.
27,	144	William W. Jones, . .	Door-tender, .	15	No, .	. . .	Empire, ...	Wilkes-Barre, ...	Hip dislocated and otherwise bruised by being caught while coupling cars.
27,	145	Daniel D. Williams, .	Miner, ...	30	No, .	. . .	do.	do.	Aukle fractured by a fall of coal.
Sept. 2,	146	John Shultz, ...	do. . . .	30	Yes, .	. . .	Slope No. 1, ...	Nanticoke, ...	Chin bone fractured; was struck by the bar while he was using it to pry coal down.
7,	147	William Prichard, . . .	Driver-boss, .	35	Yes, .	1	Parrish, ...	Plymouth, ...	Face aud hands painfully burned by an explosion of gas.
7,	148	James McDonnell, . . .	Driver, ...	17	No, .	. . .	Shaft No. 9, ...	Sugar Notch, ...	Squeezed between car and rib; hips slightly injured.
10,	149	Michael Phillips, . . .	Laborer, . . .	30	No, .	. . .	Nottingham, ...	Plymouth, ...	Thigh broken by a fall of coal.
12,	150	Daniel Delaney, ...	Miner, ...	40	Yes, .	4	Baltimore Tunnel, . . .	Wilkes-Barre, ...	Face and hands severely burned by an explosion of powder.
13,	151	John Vivian, ...	do. . . .	32	Yes, .	4	Slope No. 4, ...	Nanticoke, ...	Face, neck and hands severely burned by an explosion of gas.
13,	152	William Fodorski, . . .	Laborer, . . .	25	No, .	. . .	Shaft No. 2, ...	do.	Hand crushed by a fall of rock so that it had to be amputated.
14,	153	William Ashton, ...	Driver, ...	16	No, .	. . .	Shaft No. 1, Forge Vein,	do.	Found lying on the track unconscious; supposed to have been kicked by a mule.
14,	154	George Bartels, ...	Culm-loader,	45	. . . .	. . .	Gaylord Breaker, ...	Plymouth, ...	Hand crushed between cars; two fingers had to be amputated.
17,	155	Martin O'Holleran, . .	Miner, ...	58	Wid.,	4	Stanton, ...	Wilkes-Barre, ...	Arm and body painfully bruised by a premature explosion of blast.
17,	156	Frank Batlom, ...	Laborer, . . .	38	Yes, .	4	Shaft No. 9, ...	Sugar Notch, ...	Back severely bruised by a fall of boney coal.
22,	157	Adam Klurki, ...	Driver, ...	18	No, .	. . .	Shaft No. 4, ...	Plymouth, ...	Kicked in face by a mule; had two severe cuts.
27,	158	Anthony Welsh, ...	Miner, ...	40	Yes, .	2	Baltimore Slope, ...	Wilkes-Barre township,	Face and arms burned by an explosion of a cartridge of powder.
29,	159	Thomas W. Jamieson,	Door-tender, .	15	No, .	. . .	Stanton, ...	Wilkes-Barre, ...	Leg painfully bruised by falling under cars.
Oct. 1,	160	John W. Williams, . .	Miner, ...	35	Yes, .	3	Shaft No. 9, ...	Sugar Notch, ...	Face and hands slightly burned by an explosion of gas.
5,	161	Mathias Krokoski, . . .	do. . . .	27	Yes, .	. . .	Wanamie, ...	Wanamie, ...	Back severely hurt and cut between his legs by a fall of top coal.
6,	162	Robert Williams, . . .	Laborer, . . .	18	No, .	. . .	do.	do.	Leg broken by a fall of slate.
6,	163	John Payton, ...	Miner, ...	42	Yes, .	3	Nottingham, ...	Plymouth, ...	Left hip painfully injured by a fall of coal.
6,	164	Michael Gruddy, . . .	Loader, . . .	19	No, .	. . .	Breaker No. 9, ...	Sugar Notch, ...	Right leg and both shoulder bones fractured by falling under a car.
7,	165	Thomas L. Jones, . . .	Laborer, . . .	24	Yes, .	. .	Slope No. 2, ...	Nanticoke, ...	Severely bruised about their arms, hands and bodies by coal thrown by a blast which fired while they were trying to extinguish burning gas.
7,	166	Edward Jones, ...	do. . . .	28	Yes, .	. .			
7,	167	William Sterninski, . .	do. . . .	26	No, .	. . .	Newport Tunnel, ...	Glen-Lyon, ...	Leg broken by a small piece of slate falling on it.
10,	168	Oliver Glanville, . . .	Miner, ...	55	Yes, .	. . .	No. 1 Deep Shaft, ...	Nanticoke, ...	Two ribs broken by a fall of slate.
12,	169	Edmund Langan, . . .	do. . . .	45	Yes, .	. . .	Empire, ...	Wilkes-Barre, ...	Leg broken and foot sorely sprained by a fall of boney coal.
20,	170	Thomas Price, ...	Laborer, . . .	35	No, .	. . .	Gaylord, ...	Plymouth, ...	Toes painfully hurt by a fall of coal.
22,	171	Alfred Swanson, ...	do. . . .	27	No, .	. . .	Shaft No. 9, ...	Sugar Notch, ...	Foot injured by a fall of clay; necessitating amputation.

TABLE No. 5.—Continued.

Date of accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location Luzerne county.	Nature and Cause of Accident.
Oct. 24,	172	Patrick McVeigh, . . .	Miner, ...	45	Yes, .	. . .	Empire, ...	Wilkes-Barre, ...	Hip disjointed and severely cut on head by a fall of coal.
24,	173	Lewis Morgan, ...	Mine foreman, . . .		Yes, .	. . .	Slope No. 2, ...	Nanticoke, ...	Face and hands burned by an explosion of gas.
26,	174	James Grant, ...	Miner, ...	26	Yes,	4	No. 1 Deep Shaft, ...	do.	Leg broken and severely bruised on body by a fall of rock.
28,	175	William Kosloski, . . .	do. . . .	35	Yes, .	1	Hillman Veiu, ...	Wilkes-Barre, ...	Left arm broken and ribs injured by a fall of fire-clay from roof.
31,	176	A. G. Rood, ...	do, ...	38	Yes, .	3	West End, ...	Mocanaqua, ...	Slightly injured by a bowlder.
31,	177	David T. Evans, ...	do.	45	Yes, .	. . .	Empire.	Wilkes-Barre, ...	Knee badly injured by a fall of coal.
Nov. 2,	178	William Milliugtou, .	Laborer, . . .	20	No, .	. . .	Slope No. 4, ...	Nanticoke, ...	Arm severely bruised by being caught between a car and prop.
3,	179	James Higgins, ...	Miner, ...	45	Yes, .	10	Stanton, ...	Wilkes-Barre, ...	Hips painfully bruised and one finger broken by coal rolling and crushing him against a car.
3,	180	Richard King, ...	Driver, ...	17	No, .	. . .	Parrish, ...	Plymouth, ...	Toes crushed under a car; necessitating amputation.
7,	181	Hugh O'Donnell, . . .	Miner, ...	26	Yes, .	2	Conyngham, ...	Wilkes-Barre, ...	Cut and bruised on head and shoulder by coal falling from side of pillar.
9,	182	Fred Meyers, ...	do.	26	Yes, .	2	Red Ash No. 1, ...	Wilkes-Barre township,	Painfully hurt by a fall of rock.
9,	183	Joe Bushufski, ...	Laborer, . . .	30	No, .	. .	Reynolds, ...	Plymouth, ...	Faces and hands burned by an explosion of powder. While putting cotton in their lamps over an open powder keg, a spark flew in and fired it.
9,	184	Joe Beuzanski, ...	do. . . .	28	No, .	. .			
10,	185	Owen Pritchard, . . .	do. . . .	26	No, .	. . .	Nottingham, ...	do.	Pick slipped while he was splitting a lump of coal, and entered his leg.
10,	186	Michael Discue, ...	Miner, ...	40	Yes, .	3	Franklin, ...	Wilkes-Barre, ...	Face and hands burued slightly by an explosion of a cartridge of powder.
11,	187	Lewis B. Jones, ...	do.	33	No, .	. .	Red Ash No. 2, ...	Wilkes-Barre township,	Back severely hurt by a fall of rock coming from beneath the top coal.
11,	188	John Dowe, ...	Fire boss, . . .	32	Yes, .	2	Hillman Vein, ...	Wilkes-Barre, ...	Face and hands burned by an explosion of gas.
15,	189	Patrick Ruane, ...	Laborer, . . .	25	No, .	. . .	Jersey, ...	Ashley, ...	Face and hands burued by an explosion of gas.
16,	190	Alfred Lukey, ...	do. . . .	21	No, .	. . .	Dodson, ...	Plymouth, ...	Some of his ribs and shoulder-blade fractured by a fall of roof.

16,	191	Barney Smith,	Miner,	22	No,		Warrior Run,	Warrior Run,	Arm broken by a piece of top coal falling and striking him.
16,	192	George Soffa,	Laborer,	25	Yes,		Red Ash No. 2,	Wilkes-Barre township,	Face bruised and one eye destroyed by the unexpected explosion of a blast.
17,	193	William G. Evans,	Driver,	15	No,		No. 1 Deep Shaft,	Nanticoke,	Severe flesh-wound on leg; fell under a car while riding on it.
17,	194	Charles Tolley,	Laborer,	25	No,		Boston Breaker,	Plymouth township,	Leg broken at ankle; caught under a car.
21,	195	Daniel Grumm,	Miner,	55			Newport Slope,	Glen-Lyon,	Two ribs fractured by falling down the manway.
25,	196	Samuel Venetski,	Laborer,	21	No,		Alden,	Alden,	Both legs broken by a fall of top coal. One had to be amputated.
26,	197	Barney Deerey,	Miner,	62	No,		Avondale,	Plymouth township,	Face and arm slightly bruised and cut by a blast.
26,	198	Edward Collet,	do.	50	Yes,	4	Reynolds,	Plymouth,	Back painfully injured by a fall of coal.
28,	199	Lawrence Calpin,	do.	40	Yes,	4	Maffet,	Sugar Notch,	Spine fractured. Injury very serious. Caused by a fall of roof.
30,	200	James Hiscox,	do.	32	Yes,	8	Slope No. 3,	West Nanticoke,	Faces and hands painfully burned by an explosion of gas.
30,	201	David S. Evans,	do.	26	Yes,				
30,	202	Albert Ludka,	Laborer,	34	Yes,	2			
30,	203	Andrew Golgesky,	do.	27	Yes,	3			
Dec. 1,	204	Thomas Mullen,	Miner,	40	Yes,	4	Baltimore Tunnel,	Wilkes Barre,	Back and ankle bruised and cuts on head by a fall of coal.
3,	205	Samuel Titus,	Laborer,	42	Yes,	2	South Wilkes-Barre,	do.	Cut on head by a stone falling from the bucket.
5,	206	James McGarrick,	Runner,	21	No,		Franklin,	do.	Head severely crushed between cars.
6,	207	Ziba Garrison,	Miner,	36	Yes,	2	Slope No. 3,	West Nanticoke,	Body painfully bruised by a premature blast bringing top coal upon him.
6,	208	Thomas H. Jones,	Runner,	18	No,		Shaft No. 1, Lee Vein,	Nanticoke,	Arm crushed by falling under cars, necessitating amputation.
6,	209	Patrick Carr,	Miner,	35	Yes,	3	Hillman Vein,	Wilkes Barre,	Leg fractured by falling coal.
7,	210	Richard Martin,	Driver,	17	No,		Parrish,	Plymouth,	Arm broken by a kick from a mule.
8,	211	William Kovoloski,	Car coupler,	15	No,		Wanamie,	Newport township,	Knee-cap fractured by falling on rail.
8,	212	Joseph N. Risers,	Laborer,	30	No,		Shaft No. 1, Forge Vein,	Nanticoke,	Leg and three ribs fractured by a fall of slate.
8,	213	William H. Williams,	do.	62	Yes,	2	Dodson,	Plymouth,	Arm broken and body painfully bruised; crushed between car and cage.
10,	214	Henry W. Brownbridge,	Miner,	32	Yes,	2	Conyngham,	Wilkes-Barre,	Hand severely cut by a small piece of roof falling on it.
13,	215	John Rordat,	Laborer,	28	No,		Shaft No. 4,	Edwardsville,	Leg broken by a fall of top coal.
13,	216	George R. Turner,	Miner,	22	Yes,	1	Alden,	Alden, Newport twp.,	Back painfully bruised by a fall of rock.
14,	217	John Tulpin,	Laborer,	35	Yes,		Breaker No. 5,	Nanticoke,	Hip fractured by being struck by a piece of timber while unloading railroad cars.
15,	218	William Card,	Mason,	63	Yes,		Shaft No. 1, Forge Vein,	do.	Both severely burned by an explosion of gas.
15,	219	John Olziuski,	Laborer,	30	No,				
15,	220	Valentine Zemneski,	do.	22	No,		Slope No. 2,	do.	Leg broken by a fall of fireclay.
16,	221	John Flanuigan,	Miner,	45	Yes,	6	Nottingham,	Plymouth,	Ankle bone fractured by a fall of coal.
16,	222	Taomas Taomas,	do.	44	Yes,	3	Shaft No. 2,	Edwardsville,	Leg broken and cut on head by a fall of rock.
20,	223	Evan R. Hughes,	Laborer,	35	Yes,	6	Stanton,	Wilkes-Barre,	Bruised about head and body by a premature blast.
20,	224	John Lord,	Miner,	35	Yes,	5	Jersey No. 8,	Ashley,	Three ribs fractured and cut on face by a fall of rock.
21,	225	Owen Cronau,	Laborer,	24	No,		Conyngham,	Wilkes-Barre,	Severely cut on shoulder by a piece of coal falling from rib.

TABLE No. 5—Continued.

Date of accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location. Luzerne county.	Nature and Cause of Accident.
Dec. 21,	226	Thomas Rowlands, . .	Laborer, . . .	22	No, . .		Nottingham, ...	Plymouth, ...	Faces and hands burued by an explosion of gas.
21,	227	James Davies, ...	do. . . .	19	No, . .				
22,	228	Hen Commick, ...	Miuer, ...	27	Yes, .	2	Maffet, ...	Sugar Notch, ...	Leg broken by falling coal rolliug upon him.
24,	229	Arthur Lewis, ...	Driver, ...	16	No, . .		Red Ash No. 2, ...	Wilkes-Barre township,	Kicked ou the abdomen by a mule.
27,	230	Hugh Roberts, ...	Laborer, . . .	45	Yes, .		Empire, ...	Wilkes Barre, ...	Oue leg fractured and the other severely hurt by a car crushing them.
28,	231	*John L. Jones, ...	Miner, ...	36	Yes, .	3	Empire, ...	do.	The three were painfully burned by au explosion of gas.
28,	232	David H. Jones, ...	do. . . .	45	Yes, .	3			
28,	233	Symou Adamkuck, . .	Laborer, . . .	25	No, .				

*John L. Jones died January 5, 1888.

Total number, two hundred aud thirty-two (232). In addition to the above list, seventy-one (71) slight injuries wore reported, addiug which would make a total of three huudrod and three (303), but these seventy-one were of a very slight character, causing the victims only a slight loss.

RECAPITULATION.

Occupations of the Injured:

Miners,	97
Laborers,	70
Drivers and runners,	36
Doortenders,	9
All other classes,	20
Total,	232

Nationality of the Injured:

Welsh,	61
Irish,	50
Americans,	23
English,	27
Polish,	43
Hungarian,	10
German,	17
Swede,	1
Total,	232

Causes of Injuries:

By explosions of gas,	41
By falls of roof and coal,	89
By falling down shafts,	0
Injured by mine cars,	37
By explosions of powder and blasts,	23
By miscellaneous causes iuside of mines,	22
By miscellaneous causes outside of miues,	20
Total,	232

FOURTH ANTHRACITE DISTRICT.

Hon. THOMAS J. STEWART,

Secretary of Internal Affairs:

SIR: I have the honor to submit my seventh annual report:

This district produced 3,961,594 tons of coal, which is a decrease, in comparison with the year 1886, of 1,371,924 tons. The cause of this great decrease was the general strike among the miners, which closed most of the mines of the district on the 10th day of September.

The number of fatal accidents was 15, leaving 7 widows and 16 orphans, a decrease of 20 fatal accidents, 10 widows and 25 orphans. The number of non-fatal accidents was 101, also a decrease of 24 as compared with the year 1886.

The amount of coal mined per life lost was 264,106 tons, an increase of 111,720 tons over 1886, which is a much larger quantity than has ever been mined per life lost in this district before.

The average number of persons employed was 937, also an increase over 1886 of 533 persons.

I regret that even 15 persons lost their lives, when I know the number should be less if even ordinary care had been taken by some of the victims.

The report also contains the usual tables, which I hope may prove interesting.

I have made an effort to be brief, so as to conform to the suggestions made by the Chief of the Bureau of Statistics.

Yours very respectfully,

JAMES E. RODERICK,
Inspector of Mines.

HAZLETON, *March 1, 1888.*

The Total Amount of Coal Produced During the Year 1887.

A. Pardee & Co.,	377,598
Coxe Bros. & Co.,	1,005,221
Lehigh Coal and Navigation Company,	463,780
Linderman, Skeer & Co.,	227,498
G. B. Markle & Co.,	358,907
Upper Lehigh Coal Company,	288,618
J. C. Haydon & Co.,	188,935
Pardee, Sons & Co.,	153,913
G. H. Myers & Co.,	127,563
Miscellaneous Companies,	761,561
	3,961,594

Number of Employees, with the Average Number of Tons Mined per Employee.

	Number of persons employed.	Average number of tons mined per employé.
A. Pardee & Co.,	1,553	243+
Coxe Bros. & Co.,	3,318	302+
Lehigh Coal and Navigation Company,	1,715	270+
Linderman, Skeer & Co.,	1,014	224+
G. B. Markle & Co.,	972	369+
Upper Lehigh Coal Company,	649	444+
J. C. Haydon & Co.,	501	377+
Pardee Sons & Co.,	565	272+
G. H. Myers & Co.,	442	287+
Miscellaneous companies,	2,827	269+
Men at stripping and other general work,	540	. . . .
Total and average,	14,096	292+

Number of Fatal Accidents and Amount of Coal Produced per Life Lost.

	Number of lives lost.	Coal mined per life lost—tons.
A. Pardee & Co.,	2	188,799
Coxe Bros. & Co.,	6	167,532
Lehigh Coal and Navigation Company,	2	231,890
Linderman, Skeer & Co.,	. . .	No lives lost.
G. B. Markle & Co.,	2	179,464
Upper Lehigh Coal Company,	. . .	No lives lost.
J. C. Haydon & Co.,	. . .	No lives lost.
Pardee Sons & Co.,	. . .	No lives lost.
G. H. Myers & Co.,	. . .	No lives lost.
Miscellaneous companies,	3	256,520
Totals,	15	264,106

Table of Comparison Showing the Different Causes of Fatal Accidents in the Fourth District for the Years 1881, 1882, 1883, 1884, 1885, 1886 and 1887.

	YEARS.						
	1881.	1882.	1883.	1884.	1885.	1886.	1887.
Explosion of earbureted hydrogen gas,	3	1	. . .	. . .	1	1	1
By falls of coal, roof and sides,	24	24	18	10	19	13	6
By cars, inside and outside,	11	8	11	17	8	5	3
By premature blasts,	1	1	1	3	3	2	2
By machinery, inside and outside,	4	1	2	2	3	1	1
By boiler explosions,	. . .	. . .	. . .	. . .	3	1	1
Miscellaneous, inside and outside,	4	5	6	8	5	12	1
Totals,	47	40	38	40	42	35	15

TABLE A—Exhibits the Number of Deaths in Each Class of Employees Inside and Outside of the Mines, and the Causes Thereof, for the Year 1887.

CAUSES—INSIDE OF MINES.	Miners.	Miners' laborers.	Company laborers.	Drivers.	Door tenders.	Total.
By falls of all kinds,	3	1	1	. . .	1	6
By mine cars,	. . .	. . .	1	1	. . .	2
By premature blasts,	2	1	. . .	. . .	. . .	3
By explosion of gas,	1	. . .	. . .	. . .	. . .	1
Total inside,	6	2	2	1	1	12

CAUSES—OUTSIDE.	Firemen.	Slate pickers.	Total.
. . . . .	. .	1	1
By machinery,	. . .	. . .	1
By boiler explosion,	1	. . .	. . .
By cars,	. . .	1	1
Total, outside,	1	2	3

TABLE B—Gives the Total Number of Each Class of Employees, the Number of Deaths in Each Class, and the Ratio of Each Class Employed per Life Lost Inside and Outside the Mines During the Year 1887.

CLASSES—INSIDE OF MINES.	Number of each class employed.	Number of deaths in each class.	Ratio employed per death.
Miners,	3,125	6	521
Miners' laborers,	1,628	2	814
Company laborers,	1,496	2	748
Drivers and runners,	636	1	636
Door tenders,	321	1	321
Other employés,	58	. . .	. . . .
Totals,	7,264	12	605
CLASSES—OUTSIDE OF MINES.			
Slate pickers,	2,934	2	1,467
Firemen and engineers,	542	1	542
Other employés,	2,906	. . .	. . . .
	6,832	3	2,277

Classification of Fatal and Non-fatal Accidents.

CAUSE OF ACCIDENT.	Killed.	Injured.	Total.
Explosion of carbureted hydrogen gas,	1	7	8
By falls of coal, roofs and sides,	6	37	43
By cars, inside and outside,	3	21	24
By premature blasts and powder explosions,	2	18	20
By machinery, inside and outside,	1	2	3
By boiler explosion,	1	1	2
Miscellaneous, inside and outside,	1	15	16
	15	101	116

Nationality of Persons Killed and Injured.

	Americans.	Irish.	English.	Welsh.	Scotch.	Hungarians.	Germans.	Italians.	Austrians.	Totals.
Killed or fatally injured,	2	4	. .	1	1	4	2	1	. .	15
Injured,	17	24	10	6	1	25	11	2	5	101
Total,	19	28	10	7	2	29	13	3	5	116

Table of Comparison Showing the Number of Fatal Accidents per Thousand Persons Employed in and about the Mines of the Fourth District for the Years 1881, 1882, 1883, 1884, 1885, 1886 and 1887.

YEARS.	Number of employés.	Number of deaths.	Ratio employed per death.	Number of deaths per thousand employed.
1881,	11,386	47	242.25	4,127
1882,	12,298	40	307.45	3,252
1883,	13,598	38	357.84	2,794
1884,	14,299	40	357.47	2,797
1885,	14,224	42	338.66	2,952
1886,	14,140	35	404.00	2,475
1887,	14,096	15	939.73	1,064
Averages,	13,434	36.71	421.05	2,779

Table of Comparison Giving the Nature and the Number of Non-fatal Accidents for the years 1881, 1882, 1883, 1884, 1885, 1886 and 1887.

YEARS.	NATURE OF ACCIDENTS.								
	Accidents, but no bones fractured.	Collar bone fractured.	Jaw bone fractured.	Ribs fractured.	Legs fractured.	Feet fractured.	Arms fractured.	Hands fractured.	Total.
1881,	57	5	. . .	1	17	. . .	8	. . .	88
1882,	97	2	1	. . .	19	4	7	6	136
1883,	99	7	1	. . .	26	4	8	8	153
1884,	131	3	1	9	33	9	14	7	217
1885,	76	8	4	3	40	7	16	4	158
1886,	66	6	. . .	2	27	4	14	5	124
1887,	52	2	2	1	32	1	6	5	101
Totals for seven years,	578	33	9	16	194	29	73	45	977

Remarks on Accidents.

The number of fatal accidents has been greatly decreased in this district the last year. Indeed it has been the banner year for this district since the Mine Law of 1870 came into effect.

More coal has been produced, per life lost than in any previous year in this, or in any of the Anthracite districts. I cannot explain the causes for this great increase in production of coal per life lost, but I think that a large share of it can be attributed to the successful operation of the Mine Law of 1885.

Yet the number of lives lost are greater than should be, as several lives were sacrificed through the neglect of proper precaution on the part of the victims, especially, those caused by cars and blasts.

The most noteworthy fact to me is the large number of persons that were injured by blasts, by powder and dynamite. I attribute these accidents to the carelessness of the victims themselves, caused possibly by their ignorance of the properties of the explosives they were handling.

By referring to Table 5, it can be seen that several were injured by driving dynamite into the holes.

These accidents are beyond the control of inspector or the mine foreman, and the remedy must come from the men themselves.

Arbitration.

During the month of January, 1887, a gradual squeeze was observed in Yorktown No. 5, which made me rather uneasy about the safety of some of the men in some parts of the mine, consequently I went through this mine several times during the last week of January. In my examination I found the sqeeze coming on towards the slope.

On the fourth day of February, I notified the mine foreman that no person should be allowed to ride up or down through said slope; neither should he allow the footman or even go himself to put a car on the track in case a car jumped off. By this order I meant to stop the slope as I knew they would have some cars off perhaps that same day. On the fifth I went down the slope again and found that a car had jumped the track the afternoon of the fourth, and that the foreman and footman went on the slope to put it on. Then I finally ordered the place stopped, giving the superintendent my reason for thinking the place unsafe.

Mr. John did not share my fears and was unwilling to stop, but asked for arbitration, which under the law I could not refuse. I consented to arbitrate the matter and named one arbitrator, while John named the other. The two arbitrators met the same afternoon and named the third. The three arbitrators went down through the slope and made a thorough examination of roof, sides, roads and everything in connection with it.

Their report is hereto annexed.

In the matter of arbitration to decide the question of the safety of Yorktown Slope No. 5, the following persons were selected, viz: L. J. Thomas, general inside foreman of the Beaver Brook Colleries, arbitrator appointed by the mine inspector; Samuel Williams, inside foreman, Jamesville No. 4, arbitrator appointed by Mr. John, for G. H. Myers & Co.; and Elmer H. Lawall, civil and mining engineer, the arbitrator selected by the other two.

After duly examining the aforesaid slope and inside workings reached by the same on Saturday evening, February 5, 1887, the arbitrators abjourned into Mr. Lawall's office at Audenried, to consider the testimony as obtained by them.

They unanimously decided that the slope in its present condition is unsafe and unfit for operation for the following reasons:

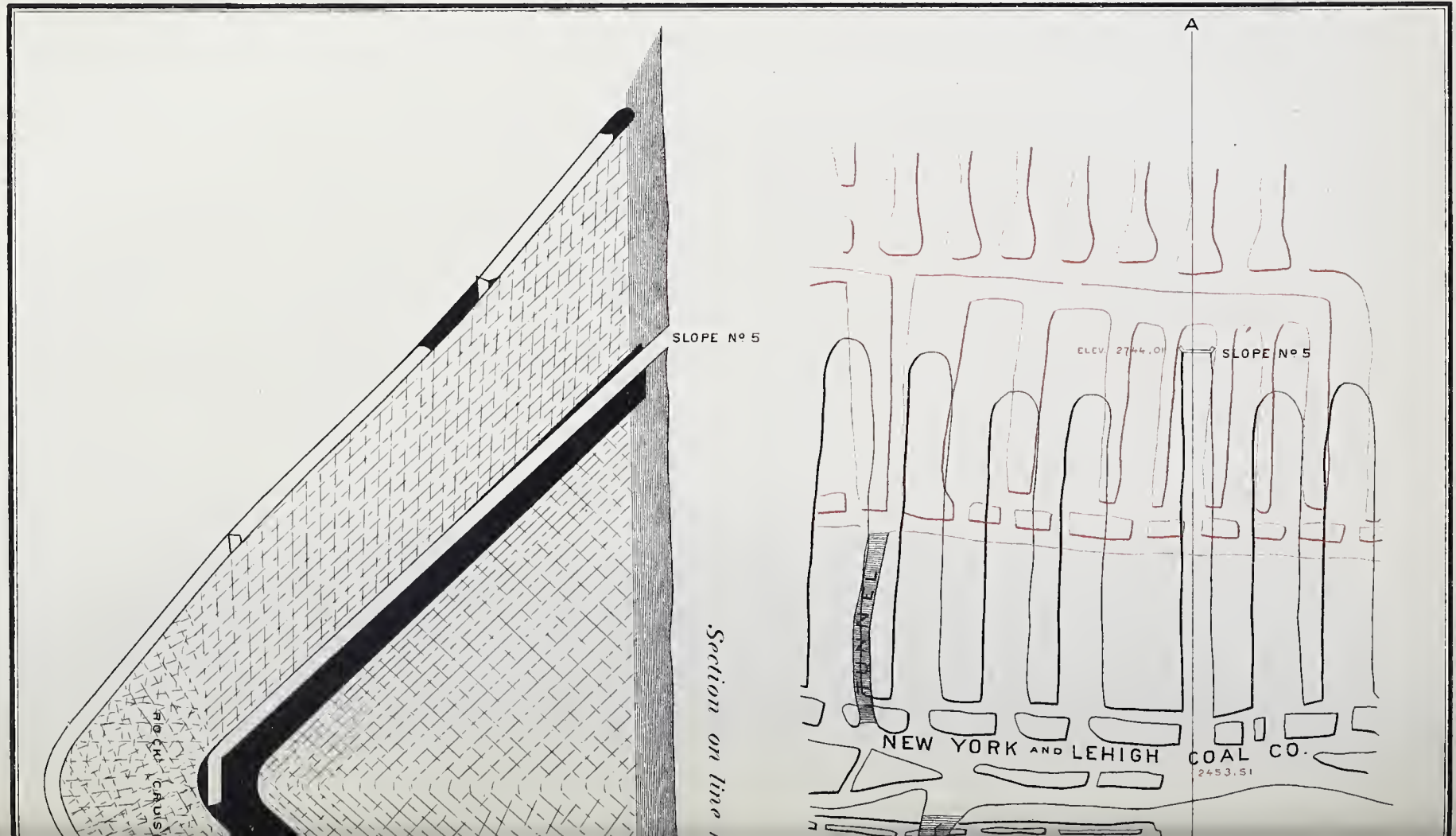
1. An examination of the coal on the sides of the slope show that the vein is not firm and the numerous slips noticed, indicate a probable squeeze in the near future.

2. The top rock shows numerous cracks, showing that the load is not properly supported, and furthermore we found that there is no timbering in the greater part of the slope.

3. From information received from inside employés, we believe that the slope pillars are entirely too small, the condition of the workings not allowing us to examine the same.

4. The slope road is not in good condition, as we find that cars frequently leave the track, and thus endangering the lives of the men whose duty it is to replace them on the road.

In our opinion we do not consider that there is sufficient coal remaining to warrant the timbering necessary; and futhermore, do not



Section on line

S 7°45 E

MAP OF YORKTOWN NO. 5 SLOPE.

TO ACCOMPANY

REPORT OF ARBITRATORS.

Elmer H. Lawall, Engr

Jas. E. Roderick, Inspector

Scale

10 50 100 200 MILES

consider that the ordinary method of timbering will properly secure the slope.

As the operators have gone to considerable expense in re-opening the inside workings, which are as safe as such workings generally are, we would suggest that the slope road should be properly fixed and guarded by guide rails; which would eliminate the necessity of having men work on the slope, and furthermore we recommend that the hoisting chain now in use be replaced by a rope, as the breaking of said chain, which is not uncommon, is liable to destroy the present protection now had by timbering.

We also recommend that the propping at the foot of the slope, for the protection of the footman, as explained by us to the mine foreman be immediately attended to.

We are of the opinion that if the above recommendations are carried out, the coal now remaining can be mined; provided, however, that the slope pillars are not further disturbed.

We are however unanimously of the opinion, that for real safety, a new slope is necessary, and would suggest that the operators should determine the feasibility of such an outlet in the Wharton Vein, which in this case is conveniently connected with Slope No. 5, Mammoth Vein workings.

D. J. Thomas, arbitrator, appointed by the mine inspector; Samuel Williams, arbitrator, appointed by George John; and Elmer H. Lawall, arbitrator, appointed by the other two.

TABLE OF COMPARISON showing the yearly and total production of each company in the Fourth Anthracite District for the last seven years, the number of lives lost, and the average amount of coal produced by each company per life lost.

NAME OF COMPANIES.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	Total production.	Number lives lost.	Tons produced per life lost.
A. Pardee & Co., Hazleton,	686,462	673 627	659,151	543,164	530, 806	543 387	377,598	4 008,265	30	133 609
Coxe Bros & Co., Drifton,	534,476	547,529	643,034	805,538	893 487	1,226 685	1,005,221	5,656,258	47	120,346
Lehigh Coal and Navigation Co., Lansford,	414,398	419,189	474,175	533.956	598,905	631.459	463 780	2 535.862	27	130,958
Linderman, Skeer & Co., Stockton,	324.250	429,577	518,308	426.522	440 552	396,641	227,498	2,764,893	25	110.596
G. B. Markle & Co., Jeddo,	413 820	472. 655	499,068	358,197	397. 553	501,141	358 907	3,001,321	19	157,964
Upper Lehigh Coal Company, Upper Lehigh,	387.842	365, 180	330,069	360,166	373,491	385 079	288,618	2,550,345	12	212,528
J. Lelsenring & Co., Eckley,	254,551	337,427	399,433	355,141	409,937	Lease exp.	..	1,756,489	14	125,463
J. C. Haydon & Co., Jeanesville,	215 000	242 379	248,904	215.241	245,126	252,042	188 935	1,607.733	7	229 676
Pardee Bros. & Co., Lattimer,	254,754	239 032	212 151	235 785	216,281	199 281	153,913	1,511.197	6	251,866
Ebervale Coal Company, Ebervale,	198,825	257,383	226,365	173 907	150,559	Idle.	Idle.	1.107,039	10	100.704
M. S. Kemmerer & Co., Sandy Run,	136 085	181,759	188,418	147,147	158 720	146,344	118.561	1,104,161	3	368 053
Pardee Sons & Co., Mt. Pleasant,	146 691	143,373	199 837	139,139	146 229	149,136	104 150	1,109 550	10	101,955
G. H. Myers & Co., Yorktown,	178 679	185.074	198,176	191,682	189,193	178,317	127,563	1,248,684	14	89.192
Wm. T. Carter & Co., Coleraine,	38,137	153 360	169,469	160,950	128 552	94,846	77,031	931.395	5	186,279
Lehigh and Wilkes-Barre Coal Co., Treskow,	116.561	135,609	148,402	132,784	107 657	71,025	71 360	783,394	11	71 218
C. M. Dodson & Co., Beaver Brook,	98,026	99,369	82.250	138 162	159,115	178,011	126 540	881.473	1	881,473
C. Pardee & Co., Hollywood,	125,141	125,841	149,437	100,410	94,249	119,393	93 528	807,997	7	105,428
Stout Coal Company, Milnesville,	142 405	120,793	93 582	78.902	101,951	109 115	75 043	722 847	2	361,423
Kemmerer & Co., Harleigh,	94,755	88,667	66.801	96,302	88,603	6,466	Idle.	439 594	5	87,919
M. S. Kemmerer & Co., Pond Creek,	32.882	Idle.	39,486	50,750	45,494	49.465	34 294	252.311	1	252,311
J. S. Wentz & Co., Black Ridge,	21,754	63,694	4,072	Idle.	10 966	56,722	31.879	189,087	No deaths.	.
J. S. Wentz & Co., Hazle Brook,	.	.	..	20.295	50,081	38,965	37,185	146.526	2	73,263
Buck Mountain Coal Company,	120,719	108,906	75,152	Abandoned.	..	..	..	304,771	No deaths.	....
Total yearly production,	5,037,948	5,360,497	5 666,767	5,274,227	5,535,543	5,333.518	3,961.594	36.170,094	258	140,194
Average number days worked each year,	225	221	221.9	184.5	208.6	221	155	.....	.....	... ..

TABLE No. 1—Showing location of Collieries in the Fourth Anthracite District.

NAME OF COLLIERY.	Name of Operator.	Location.	Name of Superintendent.	Post-Office Address.
Hazleton Mine,	A. Pardee & Co.,	Hazleton, Luzerne county,	Frank Pardee,	Hazleton, Pa.
Laurel Hill,	do.	do. do.	do.	do.
East Crystal Ridge,	do.	do. do.	do.	do.
Cranberry,	do.	do. do.	do.	do.
Number Three,	do.	do. do.	do.	do.
Number Six,	do.	do. do.	do.	do.
South Sugar Loaf,	do.	do. do.	do.	do.
Cross Creek No. 1,	Coxe Bros. & Co.,	Drifton, Luzerne county,	Hon. E. B. Coxe,	Drifton, Pa.
Cross Creek No. 2,	do.	do. do.	do.	do.
Eckley No. 5,	do.	Eckley, Luzerne county,	do.	do.
Eckley No. 10,	do.	do. do.	do.	do.
Tomhickon,	do.	Tomhicken, Luzerne county,	do.	do.
Derringer,	do.	Derringer, Luzerne county,	do.	do.
Gowen,	do.	Gowen, Luzerne county,	do.	do.
Beaver Meadow,	do.	Beaver Meadow, Carbon county,	do.	do.
Stockton,	do.	Stockton, Luzerne county,	do.	do.
No. 3,	Lehigh Coal and Navigation Company,	Nesquehoning, Carbon county,	Wm. D. Zechner,	Lansford, Pa.
No. 4,	do. do. do.	Lansford, Carbon county,	do.	do.
No. 5,	do. do. do.	do. do.	do.	do.
No. 6,	do. do. do.	do. do.	do.	do
No. 9,	do. do. do.	do. do.	do.	do.
East Sugar Loaf No. 1,	Linderman, Skeer & Co.,	Stockton, Luzerne county,	S. D. Kynor,	Stockton, Pa.
East Sugar Loaf No. 2,	do. do.	do. do.	do.	do.
East Sugar Loaf No. 5,	do. do.	do. do.	do.	do.
Humboldt,	do. do.	Humboldt, Luzerne county,	do.	do.
Oakdale No. 1,	G. B. Markle & Co.,	Oakdale, Luzerne county,	John Markle,	Jeddo, Pa.
Oakdale No. 2,	do.	do. do.	do.	do.
Highland No. 1.	do.	Highland, Luzerne county,	do.	do.
Highland No. 2,	do.	do. do.	do.	do.
No. 2,	Upper Lehigh Coal Company,	Upper Lehigh, Luzerne county,	Albert Leisenring,	Upper Lehigh, Pa.
No. 4,	do. do.	do. do.	do.	do.
No. 5,	do. do.	do. do.	do.	do.
No. 6,	do. do.	do. do.	do.	do.
No. 1,	Pardee Bros. & Co.,	Lattimer, Luzerne county,	Calvin Pardee,	Hazleton, Pa.
No. 2,	do.	do. do.	do.	do.
No. 3,	do.	do. do.	do.	do.
Spring Mountain No. 1,	J. C. Haydon & Co.,	Jeanesville, Luzerne county,	J. C. Haydon,	Jeanesville, Pa.
Spring Mountain No. 4,	do.	do. do.	do.	do.
Spring Mountain No. 7,	do.	do. do.	do.	do.
No. 5,	G. N. Myers & Co.,	Yorktown, Carbon county,	George Sohn,	Audenried, Pa.
No. 6,	do.	do. do.	do.	do.
Sandy Run,	M. S. Kemmerer & Co.,	Sandy Run, Luzerne county,	Walter Leisenring,	Sandy Run, Pa.
Pond Creek,	do. do.	Pond Creek, Luzerne county,	do.	do.
Mount Pleasant,	Pardee Sons & Co.,	Mount Pleasant, Luzerne county,	Calvin Pardee,	Hazleton, Pa.
Beaver Brook,	C. M. Dodson & Co.,	Beaver Brook, Luzerne county,	E. L. Bullock,	Audenried, Pa.

TABLE No. 1—Continued.

NAME OF COLLIERY.	Name of Operator.	Location.	Name of Superintendent.	Post-Office Address.
Tresckow,	Lehigh and Wilkes-Barre Coal Co.,	Tresckow, Carbon county,	Jed. I. Hollenback,	Audenried, Pa.
Coleraine,	Wm. T. Carter & Co.,	Coleraine, Carbon county,	John Wear,	Beaver Meadow, Pa.
Hollywood,	C. Pardee & Co.,	Hollywood, Luzerne county,	Calvin Pardee,	Hazleton, Pa.
Milnesville,	Stout Coal Company,	Milnesville, Luzerne county,	John A. Mason,	Milnesville, Pa.
Hazle Brook,	J. S. Wentz & Co.,	Hazle Brook, Luzerne county,	J. S. Wentz,	Mauch Chunk, Pa.
Black Ridge,	do.	Black Ridge, Luzerne county,	do.	do.
Harleigh,	M. S. Kemmerer & Co.,	Harleigh, Luzerne county,	Not in operation,	Harleigh, Pa.
Ebervale,		Ebervale, Luzerne county,	do. do.	Ebervale, Pa.

TABLE No. 2.—Gives the total number of tons of coal mined and tons of coke produced in each colliery, number of days worked, number of employés, number of persons killed and injured, number of kegs of powder used, &c., in the Fourth Anthracite District for the year ending December 31, 1887.

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs of powder used.	Number steam boilers.	Number horses and mules	Number mine locomotives.
A. Pardee & Co.											
Hazleton mine,	Hazleton,	93,241	87,976.09	209.7	319	. . .	3	1,228	36	44	1
Laurel Hill,	do.	55,794	48,881.17	144.7	238	. . .	1	795	48	22	1
Hazleton No. 3,	do.	45,811	39,877.06	140.1	209	1	1	938	30	26	. . .
Do. No. 6,	do.	51,515	50,168.05	154.6	191	. . .	. . .	883	10	28	. . .
South Sugar Loaf,	do.	36,686	33,445.10	144.5	133	1	4	901	24	20	. . .
Cranberry,	do.	94,548	85,301.12	154.11	454	. . .	3	1,957	54	54	3
Men at general work,	do.	. . . . .	. . . . .	. . .	10	. . .	. . .	. . . .	. . .	. . .	. . .
		377,598	345,650.19	158	1,553	2	12	6,702	204	194	5
Coxe Bros. & Co.											
Drifton No. 1, Do. No. 2,	Drifton,	345,329	308,705.17	207.5	1,051	2	7	8,073	47	116	4
Eckley No. 5,	Eckley,	89,155	73,874.06	188	245	2	2	1,439	15	30	. . .
Do. No. 10,	do.	84,836	74,031.08	249	312	. . .	3	1,889	19	33	1
Stockton,	Stockton,	5,692	1,049.06	32	153	1	3	43	26	7	. . .
Beaver Meadow,	Beaver Meadow,	129,292	116,893.18	193	338	. . .	4	1,728	17	34	1
Tomhicken,	Tomhicken,	77,823	67,184.09	200	243	. . .	1	2,199	8	35	1
Deringer, Gowen, Green Mountain,	Deringer, Gowen, Green Mountain,	273,894	252,074.06	261.5	798	1	5	7,141	18	89	4
Men at general work, not producing coal,	. . . . .	. . . . .	. . . . .	. . .	20	. . .	. . .	. . . .	4	. . .	. . .
	. . . . .	. . . . .	. . . . .	. . .	158	. . .	. . .	. . . .	. . .	. . .	. . .
		1,005,221	893,813.10	216.6	3,318	6	25	22,512	149	344	13
Lehigh Coal and Navigation Company.											
No. 3,	Nesquehoning,	117,905	73,149.07	155	436	. . .	12	1,440	35	66	5
No. 4,	Lansford,	130,602	120,928.13	182.5	336	1	2	720	37	69	1
No. 5, No. 6,	do.	87,332	80,863.05	151	416	. . .	1	720	24	39	1
No. 9,	do.	127,941	129,553.19	170.5	387	1	2	240	22	65	3
Screen building,	Hanto,	. . . . .	. . . . .	. . .	140	. . .	. . .	. . . .	. . .	. . .	. . .
		463,780	394,495.04	165	1,715	2	17	3,120	118	239	10

TABLE No. 2.—Continued.

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs of powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.
Linderman, Skeer & Co.											
East Sugar Loaf, No. 1,	Stockton,	27,227	24,743	123.5	208	. . .	1	294	16	3	. . .
Do. No. 2,	do.	66,342	60,322.19	184.5	257	. . .	1	1,107	21	12	1
Do. No. 5,	do.	77,043	71,143.17	192.5	337	. . .	1	984	46	25	2
Humboldt,	Humboldt,	56,886	52,826.17	144.5	212	. . .	. . .	1,377	29	24	1
		227,498	209,036.13	161.2	1,014	. . .	3	3,762	112	69	4
G. B. Markle & Co.											
Oak Dale No. 1,	Jeddo,	79,155	62,869.12	140	230	. . .	1	848	27	49	1
Do. No. 2,	do.	93,168	85,668	145.6	228	1	5	1,520	28	42	1
Highland,	Highland,	92,217	83,925	143.7	273	1	2	1,898	21	59	. . .
Do. No. 2,	do.	94,367	85,789.17	138	241	. . .	1	1,688	18	43	. . .
		358,907	318,252.09	141.8	972	2	9	5,954	94	192	2
Upper Lehigh Coal Company.											
No. 2,	Upper Lehigh,	163,683	145,056.03	162.3	398	. . .	2	3,745	48	45	3
No. 4,	do.	124,935	119,828.02	163.3	251	. . .	3	2,086	16	41	1
		288,618	264,884.05	162.8	649	. . .	5	5,831	64	86	4
Pardee Bros. & Co.											
No. 2,	Lattimer,	69,164	58,090	133.5	340	. . .	2	1,275	34	39	2
No. 3,	do.	84,749	80,117	142	225	. . .	1	1,005	15	29	. . .
		153,913	138,207	137.7	565	. . .	3	2,280	49	68	2
J. C. Haydon & Co.											
Spring Mountain No. 1,	Jeanesville,	94,108	81,612.01	148	238	. . .	6	1,440	37	31	1
Do. No. 4,	do.	94,827	82,123.10	145	263	. . .	5	1,860	33	39	. . .
		188,935	163,735.11	146.5	501	. . .	11	3,300	70	78	1
G. U. Myers & Co.											
No. 5,	Yorktown,	54,406	28,509.06	86.2	187	. . .	. . .	504	32	16	1
No. 6,	do.	92,157	82,129.15	153.4	255	. . .	2	1,469	28	24	1
		127,563	111,639.01	122.3	442	. . .	2	1,973	60	40	2

Miscellaneous Companies.											
Sandy Run,	Sandy Run,	118,561	109,964.14	168.5	437	. . .	1	1,462	30	60	1
Mount Pleasant,	Mt. Pleasant,	104,150	89,351.11	145.3	393	. . .	4	1,835	45	41	. . .
Beaver Brook,	Beaver Brook,	126,540	115,095	137	344	. . .	1	2,759	40	30	1
Hollywood,	Hollywood,	93,528	86,528.03	143.7	285	. . .	7	2,371	30	45	1
Milnesville,	Milnesville,	75,043	70,061.01	126	322	. . .	. . .	1,006	29	26	2
Coleraine,	Coleraine,	77,031	72,428	173	316	. . .	. . .	1,169	32	33	2
Tresckow,	Tresckow,	71,360	58,728.14	141.8	265	2	1	1,310	36	26	1
Pond Creek,	Pond Creek,	34,294	32,353.02	168.5	93	. . .	. . .	1,132	6	13	1
Harleigh,	Harleigh,	Idle during year.									
Hazle Brook,	Hazle Brook,	37,185	33,885.13	170	226	1	. . .	1,039	12	13	. . .
Black Ridge,	Black Ridge,	31,879	28,981.05	160	146	. . .	. . .	1,158	12	9	1
Ebervale, Nos. 1 and 2,	Ebervale,	Idle during year.									
		769,561	697,377.04	153.4	2,827	3	14	15,241	272	296	10

Recapitulation.

A. Pardee & Co.,	Hazleton,	377,598	345,650.19	158	1,553	2	12	6,702	204	194	5
Coxe Bros. & Co.,	Drifton,	1,005,221	893,813.10	216.6	3,318	6	25	22,512	149	344	13
Lehigh Coal and Navigation Company,	Lansford,	463,780	394,495.04	165	1,715	2	17	3,120	118	239	10
Linderman, Skeer & Co.,	Stockton,	227,498	209,036.13	161.2	1,014	. . .	3	3,762	112	69	4
G. B. Markle & Co.,	Jeddo,	358,907	318,352.09	141.8	972	3	9	5,954	94	193	2
Upper Lehigh Coal Company,	Upper Lehigh,	288,618	264,884.05	162.8	649	. . .	5	5,831	64	86	4
Pardee Bros. & Co.,	Lattimer,	153,913	138,207	137.4	565	. . .	3	2,280	49	68	2
J. C. Haydon & Co.,	Jeanesville,	188,935	163,735.11	146.5	501	. . .	11	3,300	70	78	1
G. H. Myers & Co.,	Yorktown,	127,563	111,639.01	122.3	442	. . .	2	1,973	60	40	2
Miscellaneous companies,		769,561	697,377.04	153.4	2,827	3	14	15,241	272	296	10
Men at general work, but not producing coal,		. . . . .	. . . . .	. . .	540	. . .	. . .	. . . .	. . .	. . .	. . .
		3,961,594	3,537,191.16	155	14,096	15	101	70,675	1,192	1,607	53

TABLE No. 3.—Showing the number of each class of employés at each colliery in the Fourth Anthracite District during the year 1887.

NAMES OF COLLIERIES.	NUMBER OF PERSONS EMPLOYED INSIDE.							NUMBER OF PERSONS EMPLOYED OUTSIDE.							GRAND TOTAL—INSIDE AND OUTSIDE.
	Inside foreman.	Miners.	Miners' laborers.	All other company men.	Drivers and runners.	Doorboys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All company men.	Superintendents, bookkeepers and clerks.	Total outside.	
A. Pardee & Co:															
Hazleton Mine,	2	86	34	28	16	8	174	1	5	15	64	60	. . .	145	319
Laurel Hill,	1	40	41	21	13	2	118	1	8	19	58	34	. . .	120	238
Hazleton No. 3,	1	67	25	14	11	2	120	1	4	11	50	23	. . .	89	209
Hazleton No. 6,	1	30	35	7	7	3	83	1	4	4	79	20	. . .	108	191
South Sugar Loaf,	1	38	13	6	7	6	71	1	3	8	32	15	. . .	59	130
Cranberry,	1	165	52	36	35	7	296	1	10	21	75	51	. . .	158	454
Men at general work,	.	.	.	2			2						10	10	12
Total,	7	426	200	114	89	28	864	6	34	78	358	203	10	689	1 553
Coxe Bros. & Co.:															
Drifton No. 1,	4	280	155	161	39	19	658	6	15	29	210	127	6	393	1 051
Drifton No. 2,															
Eckley No. 5,	1	48	30	28	11	8	126	3	5	6	71	33	1	119	245
Eckley No. 10,	1	65	37	60	10	2	175	5	8	8	81	34	1	137	312
Stockton,	1	2	4	43	2	. . . .	52	2	15	6	40	37	1	101	153
Beaver Meadow,	1	73	17	57	8	5	161	3	10	13	105	42	1	177	338
Tomhicken,	1	76	10	44	6	4	141	3	7	8	55	28	1	102	243
Derringer,	2	269	55	117	29	21	493	5	22	21	184	71	2	305	798
Gowen,															
Green Mountain,	. . . .	1	8	5	. .	1	15	. .	1	4	. . .	. . .	. . . .	5	20
Men at general work,	. . . .	.		.	. . . .	. .	. . .	. .	.	.	. . .	.	.	158	158
Total,	11	814	316	513	105	60	1,821	27	83	98	746	372	13	1,497	3,318

Lehigh Coal and Navigation Company :															
No. 3,	2	118	52	41	28	20	261	2	9	21	74	69	2	175	436
No. 4,	1	91	5	69	21	12	199	1	4	16	69	47	2	137	336
No. 5,	1	65	24	28	6	3	127	1	5	10	64	51	. . .	131	258
No. 6,	1	49	16	46	14	2	128	.	3	12	. .	15	. . .	30	158
No. 9,	1	101	45	49	21	10	227	1	7	13	76	63	.	160	387
Screen building,	. . . .	.	.	. . .	.	. .		1	5	6	67	69	2	140	140
Total,	6	414	142	233	90	47	942	6	33	78	350	314	6	773	1,715
Linderman, Skeer & Co.:															
East Sugar Loaf No. 1,	1	31	15	62	10	4	123	1	4	8	39	33	. .	85	218
East Sugar Loaf No. 2,	1	64	33	45	10	3	156	1	3	11	52	34	. .	101	257
East Sugar Loaf No. 5,	2	66	35	56	16	4	179	1	4	19	62	72	.	158	337
Humboldt,	1	29	45	4	9	12	100	2	6	11	40	49	4	112	212
Total,	5	190	128	167	45	23	558	5	17	49	193	188	4	456	1,014
G. B. Markle & Co. :															
Oak Dale No. 1,	1	59	8	25	17	15	125	1	3	6	41	50	4	105	230
Oak Dale No. 2,	1	76	16	13	13	15	134	1	3	5	41	40	4	94	228
Highland No. 1,	1	101	18	11	22	14	167	1	3	5	44	49	4	106	273
Highland No. 2,	1	80	25	12	18	12	148	1	3	5	40	40	4	93	241
Total,	4	316	67	61	70	56	574	4	12	21	166	179	16	398	972
Upper Lehigh Coal Company :															
Upper Lehigh No. 2, No. 2,	1	11	6	3	5	1	27	1	8	10	72	34	9	134	161
Upper Lehigh No. 2, No. 5,	1	36	38	9	9	10	103	. .	2	5	.	.	. . .	7	110
Upper Lehigh No. 2, No. 6,	1	20	22	4	3	5	55	. . .	2	4	. . .	5	. . .	11	66
Upper Lehigh No. 2, No. 7,	. . .	23	21	3	4	2	53	.	1	3	. . . .	4	. . . .	8	61
Upper Lehigh No. 4,	1	62	62	11	10	9	154	1	4	10	66	16	. . .	97	251
Total,	4	151	149	30	31	27	392	2	17	32	138	59	9	257	649
Pardee Bros. & Co.:															
Lattimer No. 1,	. .	14	12	6	5	1	38	1	4	4	.	. .	. . .	9	47
Lattimer No. 2,	1	76	4	42	9	5	137	1	4	8	69	70	4	156	293
Lattimer No. 3,	1	50	4	13	10	4	82	1	3	7	69	63	. .	143	225
Total,	2	140	20	61	24	10	257	3	11	19	138	133	4	308	565
J. C. Haydon & Co. :															
Spring Mountain No. 1,	2	45	47	9	17	6	126	1	5	12	46	43	5	112	238
Spring Mountain No. 4,	2	54	56	24	21	8	165	1	7	10	48	32	. . .	98	263
Total,	4	99	103	33	38	14	291	2	12	22	94	75	5	210	501

TABLE No. 3—Continued.

NAMES OF COLLIERIES.	NUMBER OF PERSONS EMPLOYED INSIDE.							NUMBER OF PERSONS EMPLOYED OUTSIDE.							Grand total—inside and outside.
	Inside foreman.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Doorboys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All other company men.	Superintendents, bookkeepers and clerks.	Total outside.	
G. H. Myers & Co.:															
No. 5,	1	28	33	16	5	1	84	1	4	8	39	30 18	3	103	187
No. 6,	1	34	56	23	10	3	127	2	5	8	48	50 15	....	128	255
Total,	2	62	89	39	15	4	211	3	9	16	87	113	3	231	442
Miscellaneous Companies:															
Sandy Run,	1	58	68	43	18	12	210	1	11	14	113	83	5	227	437
Mount Pleasant,	2	95	54	36	17	11	215	1	12	13	83	66	3	178	393
Beaver Brook,	1	75	10	14	14	6	207	1	6	15	80	30	5	137	344
Hollywood,	2	17	44	10	15	1	89	4	12	17	94	64	5	196	285
Milnesville,	1	15	1	8	4		29	2	6	18	82	184	1	293	322
Coleraine,	2	58	46	36	15	5	162	3	5	15	87	38	6	154	316
Treskow,	1	22	26	60	10	2	130	1	7	13	55	57	2	135	265
Pond Creek,	1	31	27	4	7	7	77	1	2	4	...	7	2	16	93
Harleigh,	Idle during the year.														
Hazle Brook,	1	82	30	19	13	6	151	1	5	8	36	21	4	75	226
Black Ridge,	1	41	18	15	7	2	84	1	3	12	32	10	4	62	146
Ebervale No. 1 and 2,	Idle during the year.														
Total,	13	495	414	245	129	52	1,354	16	69	129	662	556	37	1,463	2,827

RECAPITULATION.

A. Pardee & Co.,	7	426	200	114	89	28	864	6	34	78	358	203	10	689	1 553
Coxe Bros. & Co.,	11	814	316	513	105	60	1,821	27	83	98	746	158 372	13	1,497	3,318
Lehigh Coal and Navigation Company,	6	414	142	233	90	47	942	6	33	78	350	314	6	773	1,715
Linderman, Skeer & Co.,	5	190	128	167	45	23	558	5	17	49	193	188	4	456	1,014
G. B. Markle & Co.,	4	316	67	61	70	56	574	4	12	21	166	179	16	398	972
Upper Lehigh Coal Company,	4	151	149	30	31	27	392	2	17	32	138	59	9	257	649
Pardee Bros. & Co,	2	140	20	61	24	10	257	3	11	19	138	133	4	308	565
J. C. Haydon & Co.,	4	99	103	33	38	14	291	2	12	22	94	75	5	210	501
G. H. Myers & Co.,	2	62	89	39	15	4	211	3	9	16	87	113	3	231	442
Miscellaneous Companies,	13	495	414	245	129	52	1,354	16	69	129	662	560	37	1,473	2,827
Men at general work, not producing coal,														540	540
Total,	58	3,125	1,628	1,496	636	321	7,264	74	297	542	2,934	2,354	107	6,832	14,096

TABLE No. 4—List of fatal accidents occurring in and about the mines of the Fourth Anthracite District for the year ending December 31, 1887.

Date of accident.	Name of Person	Occupation.	Age.	Widow.	No. of orphans.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Jan. 28	Harry Wilson,	Door tender,	16	..	..	Drifton No. 1,	Luzerne,	Killed by a fall of coal.
Mar. 9	George Bierhoider,	Laborer,	20	..		Hazle Brook,	do.	Suffocated by a fall of coal.
28	Philip Fellin,	Miner,	47	1	4	Stockton No. 3,	do.	Killed by an explosion of dynamite.
April 11	Patrick McGinley,	do.	65	1		No. 2,	do.	Fatally injured by a fall of coal.
28	Patrick Boyle,	do	46	1	2	No. 1,	do	Killed by a fall of rock.
May 7	Mike Corrilla,	Laborer,	19			do.	do.	Killed by being crushed in a breaker.
13	Stephen Shimpko,	Company laborer,	29	1	2	Eckley No. 5,	do.	Smothered by a fall of coal.
13	Thomas Friel,	Miner,	61	1	..	No. 7,	Carbon,	Both killed by the explosion of a blast.
13	Charles Friel,	Laborer,	19		..	do.	do.	
June 15	William Stemm,	Company man,	27		..	South Sugar Loaf,	Luzerne,	Crushed by a mine car.
16	George Gasper,	Fireman,	30	..	..	No. 5,	do.	Killed by a boiler explosion.
July 6	William Shlifsky,	Driver,	19	..	.	No. 3,	do.	Fatally injured by cars.
20	Richard Morgan,	Slate picker,	15	..		No. 9.	Carbon,	Fatally injured by a car.
Aug. 20	John Watson, Jr.,	Miner,	27	1	2	No. 4,	Luzerne,	Fatally injured by an explosion of gas.
Nov. 10	Anton Weiss,	do.	40	1	6	Deringer,	do.	Killed by a fall of coal.

Number killed, 15; number of widows, 7; orphans, 16.

TABLE No. 5.—List of non-fatal accidents occurring in and about the mines of the Fourth Anthracite District for the year ending December 31, 1887.

Date of accident.	Name of Person.	Occupation.	Age.	Name of Colliery.	Location.	Nature and Cause of Accident.
Jan. 3,	Michael Brown,	Pumpman,	19	No. 3,	Stockton, Luzerne county,	Nose fractured; was struck by the handle of a windlass.
5,	Patrick O'Donnell,	Laborer,		No. 1,	Jeanesville, Luzerne co.,	Slightly injured; was struck by a piece of coal.
5,	Wm. I. Hughes,	Miner,		No 4,	do. do.	Hip injured; struck by a piece of rail.
10,	John O'Donnell,	Laborer,		No. 1,	do. do.	Fingers fractured while coupling cars.
13,	Carlo Galleazza,	Miner,	50	No. 7,	Tresckow, Carbon county,	Seriously injured by a premature blast.
15,	John Matzgo,	do.	27	No. 2,	Eckley, Luzerne county,	Arm and hand badly cut by a fall of slate.
21,	Joseph Legrand,	Laborer,		No. 3,	Hazleton, Luzerne county,	Severely cut about body by a fall of coal.
21,	William Prosltt,	Miner,		South Sugar Loaf,	Luzerne county,	Seriously injured by a fall of coal.
24,	William Coxe,	Doorboy,	16	Gowen,	do.	Severely injured by falling from a trestling.
26,	John Johnson,	Miner,	29	Mt. Pleasant,	do.	Was seriously injured by a fall of coal.
27,	John Curran,	Laborer,		No. 1,	Jeanesville, Luzerne co.,	Was seriously injured by a fall.
28,	Michael Shottish,	Miner,		Hollywood,	Luzerne county,	Was injured by a fall of coal.
28,	George Gray.	do.		Hazleton Mine,	do.	Was seriously injured by a piece of coal rolling on him.
Feb. 2,	Michael Urish,	Laborer,	19	No. 4,	Upper Lehigh, county,	Leg fractured by a piece of coal rolling against it.
5,	Daniel Welsh,	Miner,	60	No. 2,	Highland, Luzerne county,	Was injured on head and shoulders by a fall of coal.
7,	Albert Hoebner,	Driver,	16	No. 6,	Hazleton, Luzerne county,	Was severely injured on leg, necessitating amputation.
9,	John Ward,	Laborer,	25	No. 2,	Drifton, Luzerne county,	Arm and leg injured by a fall of coal.
11,	John O'Donnell,	Miner,	22	No. 9,	Lansford, Carbon county,	These two men were severely injured by an explosion of a keg of powder by a spark from one of their lamps.
11,	William Clayton,	do.	25	No. 9,	do. do.	
26,	Andrew Began,	Laborer,		Hollywood,	Hollywood, Luzerne co.,	Leg fractured by a piece of coal rolling against it.
26,	Robert McHague,	Miner,		Hazleton Mine,	Luzerne county,	Wrist badly cut; was struck by a piece of coal.
Mar. 2,	Sam Wagsch,	Laborer,	30	No. 2	Oakdale, Luzerne county,	Was slightly injured on head; struck by a piece coal.
2,	Robert Mulralney,	Miner,	45	No. 2,	do. do.	Arm fractured and otherwise injured by a fall of coal.
5,	James Thomas,	Oiler,	15	No. 1,	do do.	Fell under car; arm fractured.
7,	John Cosmat,	Laborer,		Beaver Brook,	Luzerne county,	Was injured by a fall of clay at stripping.
9,	Gottieib Nesblit,	Miner,	40	No. 2.	Drifton, Luzerne county,	Was badly injured; caught between car and trough on slope.
10,	Michael Katchmar,	Laborer,		Beaver Meadow,	Carbon county,	Leg severely cut by a fall of slate.
10,	Edward Bruman,	Miner,		No. 2,	Drifton, Luzerne county,	Body and hip severely injured by a fall of coal.
19,	Patrick Duggan,	do.	32	No. 3,	Nesquehoning, Carbon co.,	Both these men were severely injured by a premature blast.
19,	John Havrey,	do.	33	No 3,	do. do.	
23,	John O. Murphy,	Laborer,	33	No. 2	Stockton, Luzerne county,	Had his leg fractured by lumber rolling on it.
24,	John Lauratiu,	Miner,	30	Derringer,	Luzerne county,	Both men were severely burned by an explosion of cartridges they had prepared for a blast.
24,	Joseph Nehex,	do.	28	do.	do.	
25,	Peter Carr,	do.		No. 5,	Eckley, Luzerne county,	Had the pupil of his eye injured by a piece of coal flying from his pick.

TABLE No. 5—Continued.

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Name of Colliery.	Location.	Nature and Cause of Accident.
Mar. 25,	Joseph Jullan,	Laborer,		No. 3,	Stockton, Luzerne county,	Had his leg fractured by a piece of rock from a blast.
Apr. 2,	James Coalpit,	Rockman,	42	No. 1,	Jeanesville, Luzerne co.,	Both persons were seriously injured by a premature blast while carelessly forcing a dynamite cartridge with an iron tamping bar and hammer
2,	John McGarvey,	do.	29	No. 1,	do. do.	
4,	Lewis Davis,	Miner,	45	No. 5,	Stockton, Luzerne county,	Had his shoulder dislocated by a fall of coal.
11,	Cormick McCallum,	Comp'y man,		South Sugar Loaf,	Luzerne county,	Had his eye knocked out by a nail flying from under the hammer of his partner.
20,	Paul Donohue,	Miner,	50	No. 1,	Jeanesville, Luzerne co.,	Leg fractured by a fall of slate.
22,	John Hughes,	do.	40	No. 5,	Lansford, Carbon county,	Leg fractured and otherwise injured by fall of coal.
22,	John Brokenshire,	do.	45	No. 3,	Nesquehoning, Carbon co.,	Both persons were slightly injured by an explosion of gas.
22,	Wm. Hatkin,	do.	20	No. 3,	do. do.	
25,	Joseph Hudock,	Laborer,		Hollywood,	Carbon county,	Collar-bone fractured; was caught between cars.
29,	Joseph Fink,			do.	do.	Leg fractured; was caught between cars.
May 1,	John Barenhart,	Miner,		Laurel Hill,	Laurel Hill, Luzerne co.,	Slightly burned by an explosion of gas.
1,	Herman Morganstern,	Loader,		Cranberry,	Luzerne county,	Arm and foot crushed; fell under railroad cars.
3,	George Kirschner,	Foreman,		Hollywood strippings,	do.	Both persons were seriously burned by an explosion of powder.
3,	Elmer Evans,	Asst. foreman,		do. do.	do.	
5,	Lewis Miller,	Comp'y man,	33	No. 4,	Jeanesville, Luzerne co.,	Leg severely injured while riding on a timber car.
13,	Casper Scharfer,	Miner,	45	Gowen,	Gowen, Luzerne county,	Leg fractured by a fall of slate.
25,	James McGinley,	Conductor,	25	No. 2,	Drifton, Luzerne county,	Hand crushed; caught between car and locomotive.
25,	William Rowe,	Miner,	23	Beaver Meadow,	Carbon county,	Had his leg badly cut and bruised by a fall of slate.
27,	John Bucker,	do.	36	do. do.	do.	Severely injured by a fall of coal.
27,	Herman Knapple,	do.	29	Eckley No. 2,	Luzerne county,	Ankle fractured by a fall of coal.
28,	Quintiglio Arnold,	do.	22	Derringer,	do.	Leg fractured by a fall of coal.
June 6,	William Thomas,	Driver,	16	Yorktown,	do.	Leg fractured; fell under mine car.
6,	Cormick Conahan,	Miner,	35	South Sugar Loaf,	do.	Injured about body by a fall of coal.
6,	Joseph Snaffager,	Laborer,	36	Mt. Pleasant,	do.	Severely injured by a fall of coal.
6,	Michael Kohl,	do.	25	Nesquehoning,	Carbon county,	Jaw fractured; was struck by a car he was putting on the road.
6,	Peter Garrahan,	Driver,	17	do.	do.	Leg fractured; his mule tramped on him.
7,	George Burke,	Miner,	30	Lattimer No. 1,	Luzerne county,	Leg fractured.
8	Joseph Mathews,	do.		Hazleton Mine,	do.	Slightly burned by an explosion of gas.
8	John Middle,	Laborer,	22	Stockton No. 3,	do.	Leg fractured; fell while lifting heavy timber.
14,	Thomas Eroh,	do.	22	Upper Lehigh No. 4,	do.	Leg fractured by a piece of coal sliding against it.
14,	John Beishline,	Miner,	45	Highland No. 1,	do.	Severely cut on face and shoulder by a fall of coal.
16,	Anglo Paleomo,	Loader,	24	Lattimer,	do.	Was severely injured; head caught between top rail and coal chute.
16,	Christian Bach,	Carpenter,	38	Eckley No. 5,	do.	Leg fractured; was struck by a piece of exploding boiler.

20,	Joseph Moiskey,	Laborer,	45	Yorktown No. 6,	Carbon county,	Severely injured by a fall of coal at stripping.
21,	William Ford,	Engineer,	23	Stockton,	Luzerne county,	Severely scalding by escaping steam from locomotive.
22,	George Trewren,	Miner,	40	Lansford, No. 4,	Carbon county,	Leg fractured by a fall of coal.
29,	John Volkenand,	Carpenter,	36	Upper Lehigh,	Luzerne county,	Leg fractured by falling from the roof of a stable.
29,	John Heinmer,	Helper,	17	Drifton No. 2,	do.	Leg fractured; fell under mine cars.
29,	Charles Ward,	Laborer,	18	Mt. Pleasant,	do.	Leg fractured by a fall of slate.
July 6,	John Breshock,	Oiler,	14	Drifton No. 2,	do.	Leg fractured; was caught by a belt in breaker.
13,	John Baiko,	Laborer,	26	Hollywood,	do.	Severely injured; slipped and fell into chute in breaker.
15,	William McCabe,	Miner,	35	Nesquehoning,	Carbon county,	Was seriously injured about face and eyes by premature blast.
18,	Hugh McCabe,	L. Eng.,	45	do.	do.	Ribs fractured; was struck by a lever.
27,	Adam Kidon,	Laborer,	30	do.	do.	Jaw-bone fractured; was struck by a sprag that flew out of the wheel of a car.
22,	Fred. Bing,	Miner,	27	do.	do.	Seriously hurt on the eye; was struck by a piece of coal.
26,	Charles Boyle,	do.	40	Beaver Meadow,	do.	Leg fractured; was struck by a piece of coal flying from a blast.
30,	John Shuck,	Laborer,	19	South Sugar Loaf,	Luzerne county,	Arm fractured and otherwise injured while dumping a car.
30,	Edward Moore,	Patcher,	17	Upper Lehigh No. 4,	do.	Arm fractured; caught by a car wheel while spragging.
30,	Michael Stroboroskie,	Miner,	27	Oakdale No. 2,	do.	Leg fractured by a fall of coal.
30,	Mike Heydock.	do.	28	do.	do.	Severely bruised about body by the same fall.
Aug. 1,	William Ronemus,	do.	30	Nesquehoning,	Carbon county,	Both persons slightly burned by an explosion of fire-damp.
1,	Joseph Dougherty,	Laborer,	24	do.	do.	
1,	John Hainlin,	Miner,	20	Hazleton No. 6,	Luzerne county,	Severely injured; squeezed between mine cars.
1,	John Petrascet,	do.	39	Mt. Pleasant,	do.	Compound fracture of leg; caused by a fall of coal.
1,	Domiuic Sweitzer,	do.	28	Oakdale No. 2,	do.	Leg fractured and otherwise injured by a fall of coal.
3,	A. Davis,	do.	30	Jeanesville No. 4,	do.	These two men were severely injured by an explosion of Rackarock powder.
3,	John Steck,	Laborer,	28	do.	do.	
6,	John Bourer,	Miner,	32	Drifton No. 2,	do.	Was severely injured by a fall of coal.
10,	Clement Cassari,	do.	32	Eckley No. 2,	do.	Severely burned about face and hands by a premature blast.
17,	Wm. Van Horn,	do.	29	Upper Lehigh No. 7,	do.	Leg fractured by a fall of coal.
19,	Marcus Toland,	Slate picker,	14	Sandy Run,	do.	Seriously injured leg and skull fractured; he was caught by a pulley while tarring the rope on the top of the breaker.
20,	John Watson,	Miner,	50	Lansford No. 4,	Carbon county,	Was severely injured by an explosion of gas in his chamber.
24,	Joseph Volinsky,	do.	25	Tomhickon,	Luzerne county,	Thumb crushed and otherwise badly injured by a fall of coal.
Sept. 8,	James Costello,	Laborer,	17	Lattimer strippings,	do.	Leg fractured by falling under a car.

RECAPITULATION.

By explosion of carburetted hydrogen gas,	7
By falls of all kind,	37
By cars inside and outside,	21
By premature blasts and explosion of powder,	18
By machinery inside and outside,	2
By boiler explosion,	1
By miscellaneous causes inside and outside of mines,	15
Total number injured,	101

The names and post-office address of the mine foremen in the Fourth Anthracite District who received certificates of service as provided in Article VIII of the Anthracite Mine Law:

James Durkin, ... Hazleton, Luzerne county, Pa.
Conrad Miller, ... Hazleton, Luzerne county, Pa.
Peter Watson, ... Hazleton, Luzerne county, Pa.
William Hatkin, ... Hazleton, Luzerne county, Pa.
Henry Youngcourt, ... Hazleton, Luzerne county, Pa.
John W. Henry, ... Hazleton, Luzerne county, Pa.
Benjamin Rees, ... Hazleton, Luzerne county, Pa.
Thomas Kromise, ... Upper Lehigh, Luzerne county, Pa.
J. S. McDonald, ... Lansford, Carbon county, Pa.
Archibald Reeves, ... Lansford, Carbon county, Pa.
Charles Powell, ... Coaldale, Carbon county, Pa.
David W. Griffith, ... Lansford, Carbon county, Pa.
W. D. Thomas, ... Audenried, Carbon county, Pa.
W. M. Davis, ... Beaver Meadow, Carbon county, Pa.
Martin Corrigan, ... Milnesville, Luzerne county, Pa.
Thomas Charton, ... Sandy Run, Luzerne county, Pa.
Stephen Charles, ... Sandy Run, Luzerne county, Pa.
Michael Marley, ... Drifton, Luzerne county, Pa.
David W. James, ... Drifton, Luzerne county, Pa.
James Lewis, ... Eckley, Luzerne county, Pa.
Hugo Ronennis, ... Nesquehoning, Carbon county, Pa.
Benjamin Hammond, ... Nesquehoning, Carbon county, Pa.
Rees Davis, ... Tomhicken, Luzerne county, Pa.
Evan Watkins, ... Gowen, Luzerne county, Pa.
Isaac D. Williams, ... Drifton, Luzerne county, Pa.
Thomas Howells, ... Beaver Meadow, Carbon county, Pa.
Daniel Sachs, ... Deringer, Luzerne county, Pa.
William James, ... Humboldt, Luzerne county, Pa.
Thomas Shepherd, ... Upper Lehigh, Luzerne county, Pa.
Thomas E. Griffiths, ... Harleigh, Luzerne county, Pa.
Robert Hagan, ... Lattimer, Luzerne county, Pa.
William H. Dunn, ... Beaver Meadow, Carbon county, Pa.
Henry Horrox, ... Jeddo, Luzerne county, Pa.
Thomas Brown, ... Freeland, Luzerne county, Pa.
John C. Turner, ... Jeddo, Luzerne county, Pa.
Owen R. Williams, ... Tresckow, Carbon county, Pa.
Samuel Williams, ... Jeanesville, Luzerne county, Pa.
Morgan Rees, ... Jeanesville, Luzerne county, Pa.
Thomas R. Edwards, ... Stockton, Luzerne county, Pa.
Josiah Jenkins, ... Stockton, Luzerne county, Pa.
Peter Floyd, ... Stockton, Luzerne county, Pa.
William Donald, ... Stockton, Luzerne county, Pa.

William Cooke, ... Stockton, Luzerne county, Pa.
George Nesbit, ... Ebervale, Luzerne county, Pa.
Jacob Schumacher, ... Do. Luzerne county, Pa.
James Long, ... Eckley, Luzerne county, Pa.
David Phillips, ... Drifton, Luzerne county, Pa.
Patrick Boyle, ... Drifton, Luzerne county, Pa.
Levi Harris, ... Hazle Brook, Luzerne county, Pa.
Fred. Young, ... Mt. Pleasant, Luzerne county, Pa.
George Hishburn, ... Mt. Pleasant, Luzerne county, Pa.
William Powell, ... Upper Lehigh, Luzerne county, Pa.
Gomer E. Jones, ... Upper Lehigh, Luzerne county, Pa.
George Kirschner, ... Hollywood, Luzerne county, Pa.
Isaac Evans, ... Yorktown, Luzerne county, Pa.
John N. Davis, ... Lansford, Carbon county, Pa.
W. H. Evans, ... Summit Hill, Carbon county, Pa.
Thomas M. Whildin, ... Lansford, Carbon county, Pa.
Benjamin Gibbon, ... Drifton, Luzerne county, Pa.
Joseph Dixon, ... Lattimer, Luzerne county, Pa.
August Yeager, ... Hazleton, Luzerne county, Pa.
David Macfarlane, ... Jeanesville, Luzerne county, Pa.
John Airey, ... Stockton, Luzerne county. Pa.
Paul Winters, ... Drifton, Luzerne county, Pa.
*Peter Pitt, ... Black Ridge, Luzerne county, Pa.

The names and post office address of successful applicants for certificates of qualifications. The examination was held in Hazleton, May 25 and 26, 1886. The examiners were James E. Roderick, Inspector, Hazleton, Pa.; M. S. Kemmerer, operator, Mauch Chunk, Pa., and Anthony Reilly, miner, Hazleton, Pa.:

†D. I. Thomas, ... Beaver Brook, Luzerne county, Pa.
‡William Hughes, ... Jeanesville, Luzerne county, Pa.
†Samuel Dunkerly, ... Jeddo, Luzerne county, Pa.
James Bolin, ... Freeland, Luzerne county, Pa.
‡Joseph James, ... Drifton, Luzerne county, Pa.
†John Gundry, ... Stockton, Luzerne county, Pa.
†George M. Davis, ... Lansford, Carbon county. Pa.
‡D. O. Pritchard, ... Freeland, Luzerne county, Pa.
William Pritchard, ... Lansford, Carbon county, Pa.
‡Isaac M. Stickler, ... Lansford, Carbon County, Pa.
‡Joseph Kelshaw, ... Beaver Meadow, Carbon county, Pa.
Lawrence Boyce, ... Beaver Meadow, Carbon county, Pa.
‡James Rowe, ... Beaver Meadow, Carbon county, Pa.
David R. Lloyd, ... Drifton, Luzerne county. Pa.

*These names were left out of my last year's report through some oversight at Harrisburg.

† These men had been mine foremen for years before the law of 1885.

‡ These men have been engaged as mine foremen since receiving certificates.

The above list of names was also mislaid at Harrisburg, which is the reason that it did not appear in my last report.

The annual examination of candidates for certificates of qualifications was held in Hazleton June 22 and 23, 1886.

The board of examiners for the Fourth District composed of James E. Roderick, Inspector, Hazleton, Pa.; M. S. Kemmerer, operator, Mauch Chunk, Pa., and Alexander Morton, miner, Jeanesville, Pa. Follow-lowing are the names and post-office address of the successful applicants:

*William Aubrey,	Eckley, Luzerne county, Pa.
Thomas Jefferson Williams,	Lansford, Carbon county, Pa.
*Elmer E. Evans,	Hollywood, Luzerne county, Pa.
William Hammond,	Nesquehoning, Carbon county, Pa.
William H. Davis,	Lansford, Carbon county, Pa.
John T. Burns,	Lattimer, Luzerne county, Pa.
*Thomas McNamara,	Beaver Meadow, Carbon county, Pa.
Thomas Morgan,	Yorktown, Carbon county, Pa.
*Evan Thomas,	Drifton, Luzerne county, Pa.
Thomas D. Davis,	Drifton, Luzerne county, Pa.
John D. Williams,	Drifton, Luzerne county, Pa.
*William Hale,	Lattimer, Luzerne county, Pa.
William Davis,	Drifton, Luzerne county, Pa.
David Edmunds,	Drifton, Luzerne county, Pa.
Gomer S. Morgan,	Freeland, Luzerne county, Pa.

*Those having a star [*] affixed have been engaged as mine foremen since receiving their certificates.

FIFTH ANTHRACITE DISTRICT.

Office of Inspector of Mines,
Shenandoah, Pa., *March 10, 1888.*

Hon. Thomas J. Stewart,
Secretary of Internal Affairs:

Sir: I have the honor of herewith presenting to you my third annual report of the Fifth Inspection District of Schuylkill.

Accompanying this report are tables containing statements of the number of employés, number of tons of coal mined, number of accidents and their causes for 1887, and comparisons with the preceding five years.

We are glad to be able to report that no unusual accident has occurred in this district during the year, yet the fatal accidents number fifty-five (55), being fourteen (14) more than in 1886, with an increase in the production of coal mined of 435,710.14 tons.

It must be quite apparent to the reader acquainted with mining operations, and especially to every intelligent miner after carefully reading the list of accidents, that many of them have occurred on account of their own carelessness, or of those with whom they are working. I find that after examining into the causes of the fatal accidents, twenty-three (23) have lost their lives by carelessness. I intend to give a detailed account of all such accidents for the year 1888, as well as to refer briefly to the condition of each colliery in my district, also giving the names of each foreman in charge inside and outside.

General Condition of the Collieries.

The condition of the collieries in my district is good, with but few exceptions. Some have started only towards the close of the year, and it will take some time to complete the necessary improvements, which are in course of construction. Some collieries, I am sorry to say, have suffered more or less from want of proper ventilation, and yet the volume of air in the colliery is sufficient for all purporses, but the foreman fails to look after its proper distribution, and makes no effort to keep the air up to the working spaces. This as a matter of course, is detrimental to the interest of the operator, to the workmen under his charge in various ways, and also brings him into conflict with the mine inspector, for by a studied unwillingness to comply with the law, it would seem as if litigation was courted by some foremen.

I notice some very valuable improvements made during the year at some of the breakers in my district. At Kehley's Run the boilers under the breaker have been torn out, which was very much needed, and Mr. Baird has my thanks for having them removed, although from Article 5, section 2, of the Mine Ventilation Law, I could not enforce their removal. The boilers and their connections for supplying steam to all the machinery outside and inside have been renewed, and built of the best boiler-plate in the market, and their connections and buildings has had Mr. Baird's special supervision, so as to insure the greatest amount of safety possible against boiler explosions.

At Ellangowan Colliery some very valuable improvements have been made at the breaker. The machinery at this breaker is better fenced off than at any colliery in the Fifth district. A fan has also been put in to take the dust from the workmen. This is the only fan in use in connection with breakers in my district. Steam pipes have also been put in all around the breaker and under the picking tables, so as to keep men and boys warm in winter. Formerly large stoves were used for heating purposes, which were always looked upon as a source of great danger from fire. A great many other appliances have from time to time been put in place, which are not only useful but safe. Mr. Charles Beach and his assistant, Mr. Thomas Williams, make it a study always to have every department of their colliery in good condition, which makes it well worthy of the name of the "Model Colliery." The shipment from Ellangowan in 1887 was 435,335.19 tons.

I send a section on line of hoisting slope, Girard Colliery, Girardville, showing this slope sunk from first (1st) lift gangway, going through the strata between the Holms and Mammoth Veins, south dip, pitch 63°, and cutting through the Mammoth Vein on the north dip. A tunnel is driven south to Skidmore Vein, and gangways are being driven east and west. These gangways are to be the principal transportation gangways. At intervals tunnels will be driven north from these gangways, cutting the Mammoth Vein on both dips, and gangways driven, the breasts opened from these gangways to be driven to their limit, coal drawn out of breasts, then sectionally, finally "rob" out the Mammoth gangways, thus avoiding the protracted maintenance in keeping gangways open on the Mammoth Vein. A tender slope is also sunk on Holm's Vein and east of hoisting slope, to be used for hoisting men and material to carry on mining. These two slopes have been sunk at a great deal of expense. The new work is well timbered. A new twenty-foot fan is to be built, and return air courses of large area driven to connect therewith, which when the plans are in full operation, if not the cheapest shipping colliery, will make one of best conducted in the coal regions.

WILLIAM STEIN,
Inspector.

Appended to my report is a sketch showing position of rock blown out by dynamite near bottom of bore-hole No. 1, Kohinoor colliery, Shenandoah, belonging to the Philadelphia and Reading Coal and Iron Company, as well as a sketch of the appliances used for its accomplishment under the supervision of Mr. John L. Williams, division mining superintendent.

It was found that the former operators, Messrs. Hecksher & Co., in course of mining coal from the Mammoth vein, in the neighborhood and under the Grant and other properties, a very large opening had been formed about one hundred (100) yards square, the vein being sixty (60) feet thick at this point, on account of which the property owners became alarmed as to the safety of their lives and property, and an appeal was made to prevent any more mining. It became a matter of serious consideration on the part of the officials of the Philadelphia and Reading Coal and Iron Company what should best be done to protect the property built over this large cavity and more especially the lives of those living in that vicinity and also to still continue mining coal without injury to either.

Mining at this district of the colliery was suspended until some means could be devised to prevent a collapse of the overlying strata. After mature deliberation of those in charge and in any way interested, it was decided to put down three (3) bore-holes from the surface at intervals and having a relative connection to this large opening, so as to run down with water "silt" from the culm banks.

The first bore-hole was put down on the Grant property to a depth of three hundred and ninety-eight (398) feet and eight (8) inches diameter and passing through two hundred (200) feet of conglomerate rock.

When the open space had been filled up to a point from which the bottom of the bore-hole could be seen and examined, it was discovered that the top rock of the vein had fallen on the east side of the bore-hole twenty-five (25) feet higher than bottom of bore-hole. As it was very desirable to fill the cavity as nearly as possible, and it being impossible to deposit the slush at any higher point than the bottom of the bore-hole, it was necessary that some plan must be adopted to fill up this twenty-five (25) feet. On examination the rock to east and at bottom of bore-hole was found to be six (6) feet to A, as shown by the irregular line A, B, C, D on sketch, ten (10) feet at B, and twenty-five (25) feet at D.

It was found impossible to drive an opening to the bore-hole between the lines D E and C F on account of the broken and dangerous surroundings. Mr. Williams, into whose charge the entire operations had been given, conceived the idea that an opening under the smooth D-E must be made to the bore-hole from above. He therefore took the initiatory step to plug the bottom of the hole so as to resist the force of the explosives to be used in causing a displacement of the

rock from F to C. This was done by the plug shown on large scale in accompanying sketch made of oak seven and three quarters ($7\frac{3}{4}$) inches in diameter and two (2) feet long, sawed through its entire length, with a hole bored through the middle to admit the passage of an iron bolt one and a half ($1\frac{1}{2}$) inches in diameter, the head of which was made in the shape of a cylinderical wedge.

The top of the plug was hollowed out so as to allow the wedge-shaped head of the bolt to enter about one-half its length, with the two halves of the oak plug close together. Across the bottom of plug a piece of oak timber two (2) feet long by six (6) inches thick was placed so as to give a bearing of eight (8) inches on the face of the rock on either side of bore-hole with an iron washer and the nut screwed loosely on end of bolt. The plug being inserted as shown on sketch and the nut tightened so as to pull the wedge into the plug and forcing it against the sides of the bore-hole, an iron cap was also placed on top of the wedge before entering the plug into the hole so as the force of the explosion would tend to tighten rather than blow it out. The bore-hole was then filled up with sand within four and a half ($4\frac{1}{2}$) feet of smooth D E, the distance ascertained by soundings.

A tin case was made four and a half ($4\frac{1}{2}$) feet long and six (6) inches in diameter with a handle made of seven-eighth ($\frac{7}{8}$) round iron flattened out to form a strap down both sides and across the bottom. Four steel bow springs were attached near the top of the case to hold it in position in the hole and also to pull it up if from any cause it was found necessary.

Before putting the dynamite in the case it was loaded and let down the hole to the sand in the bottom and drawn out again to prove that no obstruction was in the way to prevent the cartridge going to the desired point. It was charged then with fifty (50) pounds of dynamite and let down and fired with a galvanic battery.

On examination after everything was quiet inside it was found that the rock in the space C, D, E, F was all broken although not displaced while the plug in the bottom of bore-hole showed no sign of having been disturbed.

As the rock in the space C, D, E, F was only broken up, it was decided to displace it with another shot by dropping a few pounds of dynamite wrapped in lamp cotton allowing it to explode by concussion. This was continued until thirty-five (35) pounds were dropped down into the hole and which was then fired by a stick of dynamite with fuse and cap attached, and, lighting the fuse, the whole was let fall to the bottom. This second blast cleared out the space C, D, E, F entirely four (4) feet wide, making a perfectly clear opening through which the slush could flow and is now filled up.

The work of filling up under No. 2 bore-hole was then commenced, and in a few months will have these large openings filled up. I have visited inside in company with Mr. Williams several times, walking on

top of the material run down, and found it quite hard. The water leaves the silt after it is deposited and finds its way to the shaft, where it is again hoisted to the surface. The water at this colliery has all along been hoisted, the only one where pumps are not used in my district.

Mr. Williams may well feel proud of the undertaking he originated, as it not only restores the safety of a large district of the city of Shenandoah, but it is calculated that six hundred thousand (600,000) tons of coal can be got through his effort which would have been otherwise lost, and my object in giving a descriptive detail of the means used to fill up this large and dangerous underground excavation is that it may be instrumental in putting it into the minds of others mining coal and placed in such like circumstances to do as is being done at Kohinoor colliery.

TABLE No. 1.—Showing Comparative Statement of Fatal Casualties for the Years 1886 and 1887.

	YEARS.	
	1886.	1887.
Explosions of fire-damp,	1	2
Explosions of blasting materials,	3	1
Premature explosions,	2	1
Falls of coal and roof,	21	31
Crushed by mine cars,	6	9
By machinery on surface,	. . . . .	2
Falling down shafts and slopes,	1	1
Explosions of boilers,	1	. . . . .
Miscellaneous,	6	8
Totals,	41	55

Number of Fatal Accidents and Amount of Coal Produced per Life Lost.

	Number of fatal accidents.	Tons of coal produced per fatal accident.
Philadelphia and Reading Coal and Iron Company,	26	125,832.8+
Lehigh Valley Coal Company,	4	79,874.7+
Lehigh and Wilkes-Barre Coal Company,	5	55,576.6
Lentz, Lilly & Company,	4	76,083.4
Individual firms,	16	75,301.5+

TABLE No. 2.—Showing Comparative Statement of Non-Fatal Casualties for the Years 1886 and 1887.

	YEARS.	
	1886.	1887.
Explosions of fire-damp,	3	8
Explosions of blasting materials,	6	6
Premature explosions,	4	2
By coal flying from shots,	1	2
Falls of coal and roof,	30	41
Crushed by mine cars,	25	22
By machinery on surface,	3	2
Falling down shafts and slopes,	1	4
Explosions of boilers,	. . . . .	1
Miscellaneous,	28	17
Totals,	101	105

TABLE No. 3.—Showing the Amount of Coal Produced and Shipped During the Years 1886 and 1887 Respectively.

	YEARS.	
	1886.	1887.
Amount of coal produced,	4,972,502.07	5,396,465.04
Amount of coal shipped,	4,570,146.18	5,005,857.12

TABLE No. 4.—Comparative Table Between the Years 1886 and 1887.

	YEARS.	
	1886.	1887.
Number of persons employed,	15,191	14,608
Tons of coal produced per life lost,	121,280	98,117
Ratio of employés per life lost,	370	265.6
Number of tons mined per each personal injury,	49,232	33,727¾
Average number of tons mined per employé,	321	369.4
Ratio of employés per each personal injury,	152	91.3

TABLE No. 5.—Taking the Death Rate per Thousand as a Basis of Comparison Between the Different Companies and Individual Operators we have the Following Ratio for the Year 1887:

	Number of employés.	Number of deaths.	Death rate per thousand.
Philadelphia and Reading Coal and Iron Company,	7,618	26	3.41
Lehigh Valley Coal Company,	1,429	4	2.79
Lehigh and Wilkes-Barre Coal Company,	924	5	5.41
Lentz, Lilly & Company,	1,115	4	3.58
Individual firms,	3,522	16	4.54
Totals,	14,608	55	3.94

TABLE No. 6.—Comparative Statement of Fatal and Non-Fatal Casualties and their Causes for Five Years.

Fatal Casualties.	Years.					Totals for five years.	Aggregate.
	1883.	1884.	1885.	1886.	1887.		
Explosions of fire-damp,	6	2	4	1	2	15	. . .
Explosions of blasting materials,	2	6	5	3	1	17	. . .
Premature explosions,	6	. . .	. . .	2	1	9	. . .
By coal flying from shots,	. . .	. . .	1	. . .	. . .	1	. . .
Falls of coal and roof,	14	20	25	21	31	111	. . .
Crushed by mine cars,	8	8	4	6	9	35	. . .
By machinery on surface,	4	1	1	. . .	2	8	. . .
Falling down shafts and slopes,	. . .	4	3	1	1	9	. . .
Explosions of boilers,	3	.	2	1	. . .	6	. . .
Miscellaneous,	3	2	8	6	8	27	238
Totals of the respective years,	46	43	53	41	55	. . .	. . .
Non-Fatal Casualties:							
Explosions of fire-damp,	22	26	9	3	8	72	. . .
Suffocated by gas,	. . .	. . .	2	. . .	. . .	2	. . .
Explosions of blasting material,	5	. . .	7	6	6	24	. . .
Premature explosions,	5	11	2	4	2	24	. . .
By coal flying from shots,	5	. . .	4	1	2	12	. . .
Falls of coal and roof,	42	47	29	30	41	189	. . .
Crushed by mine cars,	26	23	17	25	22	113	. . .
By machinery underground,	. . .	. . .	1	. . .	. . .	1	. . .
By machinery on surface,	3	3	3	3	2	14	. . .
Breaking of ropes and chains,	. . .	. . .	1	. . .	. . .	1	. . .
Falling down shafts and slopes,	. . .	7	2	1	4	14	. . .
Explosions of boilers,	. . .	1	2	. . .	1	4	. . .
Miscellaneous,	26	20	35	28	17	126	596
	134	138	105	101	105	. . .	. . .

TABLE No. 7.—Comparative statement of casualties, tonnage, and employés for five years in the Fifth Anthracite District.

	Killed.	Injured.	Total.	Total number of employes.	Number of employés to each casualty.	Number of tons of coal mined to each fatal casualty.	Total number of tons of coal mined.	Number of tons of coal mined to each non-fatal casualty.	Ratio of tons of coal to each casualty.	Number of tons of coal mined to each employe.
1883,	46	134	180	13,999	74	103,292.00	4,854,724.19	36,229.00	26,821.10	366.10
1884,	43	138	181	14,884	82.30	104,948.18	4,512,800.07	32,701.09	24,987.06	303.04
1885,	53	105	158	15,151	95.90	90,217.80	4,781,517.14	45,538.20	30,262.70	315.59
1886,	41	101	142	15,191	106.97	121,280.10	4,972,502.07	49,232.60	35,017.00	320.66
1887,	55	105	160	14,608	91.3	98,117.00	5,396,445.04	51,894.7	33,727.75	369.4
Totals,	238	583	821	73,833	450.20	427,854.58	26,517,988.51	215,094.96	150,815.61	1,674.43
Average,	47⅗	116⅗	164⅕	14,766⅗	89.241	85,570.91⅗	4,903,597.70⅗	43,018.99⅕	30,163.12⅕	334.88⅗

TABLE 1.—Showing location of collieries in the Fifth Anthracite District.

Name of Colliery.	Name of Operator.	Location—Schuylkill county.	Name of Superintendent.	Postoffice Address.
Boston Run,	Philadelphia and Reading Coal and Iron Co.,	St. Nicholas,	John Veith,	Pottsville.
Bear Run,	do. do.	do.	do.	do.
Buck Mountain,	Buck Mountain Coal Company,	Mahanoy City,	John G. Scott,	Buck Mountain.
Cambridge,	Cambridge Coal Company,	Shenandoah,	William Smith,	Shenandoah.
Draper,	Draper Coal Company,	Gilberton,	B. F. Williams,	Gilberton.
Ellangowan,	Philadelphia and Reading Coal and Iron Co.,	Maple Dale,	John Veith,	Pottsville.
Elmwood,	do. do.	Mahanoy City,	do.	do.
Girard,	do. do.	Girardville,	do.	do.
Girard Mammoth,	do. do.	Raven Run,	do.	do.
Gilberton,	do. do.	Gilberton,	do.	do.
Gleudou,	J. C. Haydon & Co.,	Mahanoy City,	William P. Daniels,	Mahanoy City.
Hammond,	Philadelphia and Reading Coal and Iron Co.,	Girardville,	John Veith,	Pottsville.
Honey Brook No. 1,	Lehigh and Wilkes-Barre Coal Company,	Audenreid,	J. P. Hollenbeck,	Audeureid.
Do. No. 4,	do. do.	do.	do.	do.
Do. No. 5,	do. do.	do.	do.	do.
Indian Ridge,	Philadelphia and Reading Coal and Iron Co.,	Shenandoah,	John Veith,	Pottsville.
Knickerbocker,	do. do.	Yatesville,	do.	do.
Kohinoor,	do. do.	Shenandoah,	do.	do.
Kehley's Run,	Thomas Coal Company,	do.	Thomas Baird,	Shenandoah.
Lawrence,	Lawrence & Brown,	Mahanoy Plane,	Simon Moore,	Frackville.
Mahanoy City,	Philadelphia and Reading Coal and Iron Co.,	Mahanoy City,	John Veith,	Pottsville.
North Mahanoy,	do. do.	do.	do.	do.
North Laurel Ridge,	S. H. Barrett,	Gilberton,	P. McLaughlin,	Frackville.
Packer No. 1,	Lehigh Valley Coal Company,	Colorado,	Colonel D. P. Brown,	Lost Creek.
Do. No. 2,	do. do.	Lost Creek,	do.	do.
Do. No. 3,	do. do.	Brownsuille,	do.	do.
Do. No. 4,	do. do.	Lost Creek,	do.	do.
Do. No. 5,	do. do.	Rappahannock,	do.	do.
Park No. 2,	Lentz, Lilly & Co.,	Park Place,	Edward Reese,	Centralia, Columbia county.
Primrose,	Nevills & Co.,	Mahanoy City,	James Wynn,	Mahanoy City.
St. Nicholas,	Philadelphia and Reading Coal and Iron Co.,	St. Nicholas,	John Veith,	Pottsville.
Schuylkill,	do. do.	Mahanoy City,	do.	do.
Suffolk,	do. do.	St. Nicholas,	do.	do.
Shenandoah City,	do. do.	Shenandoah,	do.	do.
Stantou,	do. do.	Maizeville,	do.	do.
South Laurel Ridge,	S. H. Barratt,	Gilberton,	P. McLaughlin,	Frackville.
Silver Brook,	Silver Brook Coal Company,	Audenreid,	William J. Harris,	Silver Brook.
Springdale,	Lentz, Lilly & Co.,	Park Place,	Edward Reese,	Centralia, Columbia county.
Turkey Run,	Philadelphia and Reading Coal and Iron Co.,	Shenandoah,	John Veith,	Pottsville.
Tunnel Ridge,	do. do.	Mahanoy City,	do.	do.
West Shenandoah,	do. do.	Shenandoah,	do.	do.
West Bear Ridge,	do. do.	Mahanoy Plane,	do.	do.
William Penn,	William Penn Coal Company,	Shaft P. O.,	William H. Lavis,	Shaft P. O.
South Shenandoah,	H. Reese,	Shenandoah,	H. Reese,	Turkey Run.
Furnace,	Zerbe & Co.,	Gilberton,	O. Zerbe,	do.

TABLE No. 2.—Gives the total number of tons of coal mined and tons of coke produced from each colliery, number of days worked, number of employés, number of persons killed and injured, number of kegs of powder used, etc., in the Fifth Anthracite Mining District, for the year ending December 31, 1887.

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Total shipment in tons of coal.	No. days worked.	No. persons employed.	No. fatal accidents.	No. non-fatal accidents.	No. kegs powder used.	No. steam boilers.	No. horses and mules.
Boston Run,	St. Nicholas, Schuylkill county,	127,715.15	120,715.15	225 17/20	285	. . .	4	3,31[illegible]	24	29
Bear Run,	St. Nicholas, do. do.	166,229.04	156,229.04	251 9/20	359	2	4	3,350	20	33
Buck Mountain,	Mahanoy City, do. do.	89,534.06	83,746.06	191	335	3	. . .	4,243	22	22
Cambridge,	Shenandoah, do. do.	10,039.00	9,949.00	200	38	. . .	. . .	130	2	8
Draper,	Gilberton, do. do.	146,621.00	132,655.00	212	426	2	1	2,580	32	35
Ellangowan,	Maple Dale, do. do.	459,335.19	435,335.19	258 9/20	667	1	6	9,950	20	77
Elmwood,	Mahanoy City, do. do.	111,244.08	105,244.08	210 18/20	250	. . .	2	2,825	16	26
Girard,	Girardville, do. do.	. . . . .	. . . . .	. . . . .	121	. . .	2	325	16	10
Girard Mammoth,	Raven Run, do. do.	68,666.11	61,666.11	202 1/4	173	2	1	1,700	12	18
Gilberton,	Gilberton, do. do.	112,923.12	100,923.12	259	332	. . .	6	3,600	26	35
Glendon,	Mahanoy City, do. do.	76,978.10	69,099.00	150 2/10	328	. . .	2	*2,840	24	35
Hammond and Connor,	Girardville, do. do.	183,730.17	163,730.17	235 1/20	324	2	2	4,275	24	63
Honey Brook No. 4,	Audenried, do. do.	116,193.08	106,684.06	161 1/10	391	1	1	2,474	22	32
Honey Brook No. 5,	Audenried, do. do.	161,689.14	145,110.14	169 1/10	533	4	3	2,698	60	43
Indian Ridge,	Shenandoah, do. do.	247,823.03	227,823.03	250 1/4	622	2	5	6,500	32	65
Knickerbocker,	Yatesville, do. do.	242,156.16	234,156.16	228 18/20	639	. . .	4	6,300	34	54
Kohinoor,	Shenandoah, do. do.	252,586.18	240,586.18	246 2/20	545	6	3	6,700	30	54
Kehley's Run,	Shenandoah, do. do.	136,189.14	132,888.14	267 1/4	317	1	1	4,670	18	35
Lawrence,	Mahanoy Plane, do. do.	149,182.06	119,982.06	284	362	1	. . .	708	36	34
Mahanoy City,	Mahanoy City, do. do.	163,826.12	153,826. 2	242 12/20	319	1	2	3,925	24	37
North Mahanoy,	Mahanoy City, do. do.	169,898.06	161,898.06	261 2/20	424	1	2	5,550	16	39
North Laurel Ridge,	Gilberton, do. do.	33,048.05	33,031.05	252	83	. . .	2	550	5	7
Packer No. 2,	Lost Creek, do. do.	245.00	Idle.	None.	19	. . .	. . .	None.	22	10
Packer No. 3,	Brownsville, do. do.	109,185.13	102,067.13	135 1/4	449	3	. . .	2,130	24	34
Packer No. 4,	Lost Creek, do. do.	138,644.10	124,514.10	132 1/2	501	1	1	3,030	30	37
Packer No. 5,	Rappahannock, do. do.	71,424.01	61,097.01	112 2/10	460	. . .	1	2,842	28	25
Park No. 2,	Park Place, do. do.	246,371.17	228,856.07	201 10/20	784	2	5	7,212	35	87

Primrose,	Mahanoy City,	do.	do.	104,832.14	97,342.14	244 3/16	301	3	3	3,195	16	16	20
St. Nicholas,	St. Nicholas,	do.	do.	102,179.18	96,179.18	219 31/64	319	3	4	2,975	20	20	21
Schuylkill,	Mahanoy City,	do.	do.	163,181.04	154,181.04	245 5/16	425	1	6	4,500	15	15	32
Suffolk,	St. Nicholas,	do.	do.	274,320.15	259,320.15	261 5/8	517	1	8	6,400	12	12	65
Shenandoah City,	Shenandoah,	do.	do.	79,472.14	79,472.14	240 1/4	111	. . .	1	290	24	24	23
Stanton,	Malzeville,	do.	do.	19,721.01	19,721.01	198	114	1	1	300	10	10	10
South Laurel Ridge,	Gilberton,	do.	do.	91,816.12	90,316.12	176	342	2	2	. . . .	20	20	17
Silver Brook,	Silver Brook,	do.	do.	76,212.04	67,824.14	165 9/20	331	2	3	1,516	25	25	55
Springdale,	Park Place,	do.	do.	170,743.06	160,743.06	262 13/32	413	. . .	3	4,200	11	11	46
Turkey Run,	Shenandoah,	do.	do.	26,584.18	24,584.18	60 3/64	267	. . .	1	400	24	24	27
Tunnel Ridge,	Mahanoy City,	do.	do.	149,032.05	140,032.05	238 19/20	365	4	6	3,025	26	26	44
West Shenandoah,	Shenandoah,	do.	do.	. . . . .	. . . . .	. . . . .	22	. . .	. . .	. . . .	20	20	6
West Bear Ridge,	Mahanoy Plane,	do.	do.	340,000.00	310,000.00	293	849	3	7	5,000	42	42	50
William Penn,	Shaft,	do.	do.	. . . . .	. . . . .	. . . . .	86	. . .	. . .	. . . .	10	10	. . .
Mahanoy Jig-house,	Mahanoy City,	do.	do.	. . . . .	. . . . .	. . . . .	8	. . .	. . .	. . . .	. . .	. . .	. . .
South Shenandoah,	Shenandoah,	do.	do.	1,387.19	1,387.19	. . . . .	24	. . .	. . .	. . . .	. . .	. . .	. . .
Furnace,	Gilberton,	do.	do.	2,424.11	2,424.11	. . . . .							

*3,050 pounds of dynamite.

TABLE No. 3.—Showing the number of each class of employees at each colliery in the Fifth Anthracite District, during the year 1887.

NAMES OF COLLERIES.	NUMBER OF PERSONS EMPLOYED INSIDE.							NUMBER OF PERSONS EMPLOYED OUTSIDE.							
	Inside foreman.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Doorboys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters	Engineers and firemen.	Slate pickers.	All other company men.	Superintendent's bookkeepers and clerks.	Total outside.	Grand total inside and outside.
Boston Run,	1	135	39	10	8	6	199	1	4	12	68	. . .	1	86	285
Bear Run,	1	144	60	25	18	3	251	1	4	14	88	. .	1	108	359
Buck Mountain,	2	159	28	15	11	7	222	1	4	9	59	37	3	113	335
Cambridge,	1	25	. .	. . .	2	. .	28	1	. .	. . .	4	.	. . .	5	33
Draper,	1	107	120	10	12	11	261	1	7	8	90	56	3	165	426
Ellangowan,	2	305	70	9	28	15	429	2	8	16	200	11	1	238	667
Elmwood,	1	115	16	7	13	5	157	1	4	11	70	6	1	93	250
Girard,	1	67	12	11	. .	. . . .	91	1	8	12	7	. . .	2	30	121
Girard Mammoth,	2	74	14	10	8	. .	108	1	5	10	40	8	1	65	173
Gilberton,	1	155	50	12	12	7	237	1	4	14	75	. . .	1	95	332
Glendon,	1	120	40	44	11	4	220	1	14	8	59	24	2	108	328
Hammond,	2	142	15	10	26	6	200	1	7	13	90	12	1	124	324
Honey Brook No. 4,	2	84	64	70	23	5	248	1	6	13	75	48	. .	143	391
Honey Brook No. 5,	3	73	40	142	36	8	302	1	12	23	107	85	3	231	533
Indian Ridge,	2	225	100	17	58	11	413	2	7	29	160	9	3	209	622
Knickerbocker,	3	200	89	2	28	10	333	1	8	20	270	5	2	306	639
Kohinoor,	2	196	170	19	46	18	351	1	8	30	140	14	1	194	545
Kehley's Run,	1	106	18	20	12	10	167	1	6	5	85	50	3	150	317
Lawrence,	2	60	8	134	10	8	222	1	4	5	78	50	2	14	362
Mahanoy City,	1	128	40	11	16	14	210	1	4	17	80	5	2	109	319
North Mahanoy,	2	191	60	10	26	9	298	1	4	11	100	9	1	126	424
North Laurel Ridge,	1	26	4	10	2	1	44	1	2	24	10	1	1	39	83
Packer No. 2,	1	3	. .	2	. .	. .	6	1	1	7	. .	4	. . .	13	19
Packer No. 3,	3	128	75	50	14	7	277	1	7	12	89	70	2	172	449
Packer No. 4,	4	153	22	83	18	6	286	1	13	16	118	66	1	215	501
Packer No. 5,	4	140	48	58	10	8	268	1	12	18	95	65	1	192	460
Park No. 2,	2	378	80	24	34	15	533	1	21	14	127	87	1	251	784
Primrose,	1	100	19	30	3	4	157	1	3	3	89	45	3	144	301
St Nicholas,	. . .	. .	. .	. .	. .	. . . .	. .	.	. .	3	.	.	. . .	3	3
Schuylkill,	1	100	70	14	21	9	215	1	4	9	83	6	1	104	319

Suffolk,	1	227	40	12	35	11	326	1	4	11	75	7	1	99	425
Springdale,	1	93	43	...	15	11	163	1	10	7	91	57	2	168	331
Shenandoah City,	2	221	50	10	30	22	335	1	7	22	175	6	1	212	547
Stanton,	1	30	2	...	9	...	42	1	4	16	42	5	1	69	111
South Laurel Ridge,	1	26	4	14	4	2	51	...	1	2	40	19	1	63	114
Silver Brook,	1	30	6	37	...	...	74	1	5	9	67	184	2	268	342
Turkey Run,	1	169	80	9	13	9	281	1	5	9	112	4	1	132	413
Tunnel Ridge,	2	100	35	4	12	6	159	1	5	12	84	5	1	108	267
West Shenandoah,	1	136	48	4	24	6	219	1	5	14	120	5	1	146	365
West Bear Ridge,	...	6	5	...	...	...	11	...	...	11	...	...	...	11	22
William Penn,	3	300	50	50	40	6	449	1	30	20	150	195	4	400	849
Mahanoy Jig-house,	...	...	...	...	...	...	...	1	2	2	80	...	1	86	86
South Shenandoah,	1	1	2	...	...	...	4	...	...	...	3	1	...	4	8
Furnace,	1	10	2	...	...	...	13	1	...	1	7	2	...	11	24

TABLE No. 4.—List of fatal accidents occurring in the mines of the Fifth Anthracite District for the year ended December 31, 1887.

Date of accident.	NAME OF PERSON INJURED.	Occupation.	Age.	Married or single.	No. of orphans.	Name of Colliery.	Location. Schuylkill county.	Date of Investigation.	Nature and Cause of Accident in Brief.
Jan. 7,	James Houston, ...	Miner, ...	25	M.,	. . .	Girard Mammoth, ...	Raven Run, . . .	Jan. 8,	Killed by a long collar falling on him; he was cutting the leg from under it.
8,	Alfred Dehm, ...	Outside driver,	16	S.,	. . .	West Sheuandoah, . . .	Shenaudoah, . . .	8,	Fatally injured by dirt dumper; running, his foot caught between the rails.
14,	John Slavoc, ...	Inside laborer,	37	M.,	. . .	No. 1 Slope, Honey Brook,	Audenreid, ...	15,	Killed by fall of coal. Wife and family in Poland.
28,	Antonis Szatkus, ...	do.	32	M.,	2	Kohinoor, ...	Shenandoah, . . .	29,	Killed by fall of coal. Wife and children in Poland.
Feb. 4,	John Bighel, ...	Outside laborer,	24	S.,	. . .	Springdale, ...	Park Place, ...	Feb. 4,	Killed by falling through trestling; attempting to get down from upper to lower track.
14,	Resse Scourfield, ...	Miner, ...	25	M.,	1	Primrose, ...	Mahanoy, ...	15,	Killed by fall of coal skipping.
19,	George Newman, ...	do.	40	M.,	1	Schuylkill, ...	do.	21,	Killed by fall of top slate.
19,	Martin Jacobs, ...	Fire-boss, . . .	34	M.,	3	Buck Mountain, ...	do.	22,	Fatally injured by turnout collar falling on him; died on the 20th.
Mar. 9,	Frank Friday, ...	Miner, ...	48	S.,	. . .	Schuylkill, ...	do.	Mar. 10,	Fatally injured by fall of clod, died in Miners' Hospital July 7th.
15,	John Shupitis, ...	do.	35	M.,	1	Buck Mountain, ...	do.	16,	Killed by fall of coal.
16,	Patrick McNiff, ...	do.	45	M.,	7	Mahanoy City, ...	do.	16,	Killed by fall of coal.
25,	Jeremiah Curran, ...	do.	54	M.,	4	Girard Mammoth, ...	Raven Run, . . .	26,	Fatally injured by fall of coal; died on the 26th.
April 5,	George Bladusky, ...	do.	27	M.,	2	Ellangowan, ...	Maple Dale, . . .	April 5,	Fatally injured by fall of coal; died in Miners' Hospital on the 6th.
9,	Edward Dix, ...	do.	30	S.,	. . .	Kohinoor, ...	Shenandoah, . . .	10,	Killed by fall of coal.
16,	Alexander Rodger, . . .	do.	35	S ,	. . .	Packer No. 3, ...	Brownsville, . . .	16,	Killed by fall of coal.
27,	Matthias Gelenis, ...	Slate-picker, . .	28	S.,	. . ..	Indian Ridge, ...	Shenandoah, . . .	27,	Smothered in Buckwheat coal chute.
May 7,	Anthony Burdick, ...	Miner, ...	43	M.,	6	Buck Mountain, ...	Mahanoy, ...	May 9,	Killed by fall of coal. Family in Poland.
14,	Christ. Fraus, ...	Bottom man, .	21	S.,	. . .	Packer No. 4, ...	Lost Creek, . . .	16,	Killed between cars; cause, misplaced switch.
16,	Bernard Murray, ...	Miner, ...	30	M.,	2	Suffolk, ...	St. Nicholas, . . .	17,	Killed by fall of top slate. Family in England.
June 7,	Sil Plobblis, ...	Laborer, ...	30	M.,	. . .	Bear Run, ...	do. . . .	June 7,	Fatally injured by fall of top slate; died in Miners' Hospital on the 8th.
7,	Joseph Duriski, ...	do. . . .	30	S.,	. . .	Silver Brook, ...	Audenreid, ...	8,	Killed by rush of coal from high side of gangway.
7,	Thomas Duriski, ...	do. . . .	25	S.,	. . .	Silver-Brook, ...	do. . . .	8,	Killed at same time and place with Joseph Duriski (brothers).
11,	Dennis O'Conner, ...	Outside foreman	35	S.,	. . .	Honey Brook No. 5, . . .	do. . . .	12,	Killed by fall of surface rolling on him, strippings.
22,	John Welsh, ...	Miner, ...	40	M.,	6	William Penn, ...	Shaft, ...	27,	Killed by fall of coal.

July 2,	John Davidson,	do.	34	M.,	2	Hammond,	Girardville,	July 4,	Killed by fall of top coal.
13,	Patrick Campbell,	Outside laborer,	54	M.,	4	Honey Brook No. 5,	Audenreid,	15,	Fatally injured between two cars; died in Miners' Hospital on the 14th.
18,	George Taylor,	Fire-boss,	67	M.,	4	Packer No. 3,	Brownsville,	19,	Fatally burned by explosion of fire-damp; died September 22; children all married.
26,	Thomas Borne,	Miner,	35	M.,	3	Kobinoor,	Shenandoah,	27,	Killed by a rush of loose coal coming on him.
Aug. 5,	Peter Ludwin,	Laborer,	40	M.,	3	do.	do.	Aug. 5,	Killed by fall of top rock.
7,	Richard Barratt,	Slate-picker,	15	...	...	William Penn,	Shaft,	8,	Killed between buggy and cross beam of breaker.
12,	Patrick Cook,	do.	16	...	...	Packer No. 3,	Brownsville,	13,	Killed; locomotive run over him.
20,	James Hennessy,	Miner,	46	M.,	5	West Shenandoah,	Shenandoah,	22,	Killed by fall of top coal.
29,	Robert Martin,	Starter,	28	S.,	..	Draper,	Gilberton,	29,	Killed by explosion of dynamite.
Sept. 6,	Robert MacKay,	Miner,	35	M.,	4	do.	do.	Sept. 9,	Fatally injured by fall of coal; died on 10th.
10,	William Sunderland,	do.	34	M.,	3	Kohinoor,	Shenandoah,	13,	Killed by fall of top coal.
15,	John Bierstein,	do.	30	M.,	3	Bear Run,	St. Nicholas,	17,	Killed; fired a shot about himself.
20,	Constantine Baronoski,	Driver,	44	M.,	3	No. 3 Slope, Park No. 2,	Park Place,	20,	Killed between cars and breast platform.
23,	Patrick Manorion,	Miner,	30	M.,	...	Schuylkill,	Mahanoy,	24,	Killed by fall of top coal.
Oct. 12,	David Hughes,	Outside laborer,	21	S.,	...	Primrose,	do.	.....	Fatally injured between dumper and breaker timber; died on the 25th.
13,	Charles Newman,	Carpenter,	50	M.,	8	Kehley's Run,	Shenandoah,	Oct. 14,	Killed; run over on dirt plane; cause misplaced switch.
18,	Gilbert Harris,	Miner,	31	M.,	2	Primrose,	Mabanoy,	19,	Killed by fall of coal. One child adopted.
20,	Martin McCormick,	Driver,	17	S.,	...	Indian Ridge,	Shenandoah,	23,	Fatally injured; dragged along track with oil box of car: died January 18, 1888.
21,	Michael Mitchell,	Laborer,	26	S.,	...	Shenandoah City,	do.	21,	Killed by fall of top coal.
26,	George Parry,	Miner,	22	S.,	...	West Shenandoah,	do.	27,	Killed by fall of top slate.
27,	John Keich,	do.	45	M.,	3	North Mahanoy,	Mabanoy,	28,	Fatally burned with fire-damp; died on 29th.
Nov. 8,	John Fairley,	Laborer,	27	S.,	...	West Shenandoah,	Shenandoah,	Nov. 9,	Killed by fall of coal.
15,	August Sheffler,	.....	35	...	...	Springdale,	Park Place,	15,	Killed by the descending cage; was looking down the shaft; not an employee.
16,	Zaconiamic Saveris	Outside laborer,	40	M.,	2	Honey Brook No. 5,	Audenreid,	17,	Killed by surface fall at strippings. Family in Italy.
30,	John Grabuski,	Miner,	28	S.,	...	Park No. 2,	Park Place,	Dec. 2,	Killed by fall of coal.
Dec. 2,	Samuel Wilson,	do.	53	S.,	...	William Penn,	Shaft.	5,	Killed by fall of coal.
6,	Patrick O'Toole,	Repairman,	30	S.,	...	Lawrence,	Mabanoy Plane,	6,	Killed by falling down slope.
10,	Alexander Concoski.	Laborer,	28	S.,	..	Kohinoor,	Shenandoah,	10,	Killed by fall of top coal.
13,	Francisenik Zbnockie,	Outside laborer,	32	M.,	...	Honey Brook No. 5,	Audenreid,	15,	Killed by fall of surface strippings. Family in Poland
19,	Patrick McCormick,	Miner,	48	M.,	2	Hammond,	Girardville,	21,	Killed by fall of rough bench.
20,	John McDonald,	Outside driver,	18	S.,	...	South Laurel Ridge,	Gilberton,	23,	Fatally injured between dumper and breaker-brace; died on December 22.

TABLE No. 5—List of non-fatal accidents occurring in the mines of the Fifth Anthracite District for the year ending December 31, 1887.

Date of accident.	NAME OF PERSON INJURED.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location—Schuylkill Co.	Date of investigation.	Nature and Cause of Accident in Brief.
Jan. 3,	Henry Lindermuth,	Slate picker,	15			Gilberton,	Gilberton,		Leg broken; went on roof of breaker and fell down on railway.
4,	Henry Fowler,	Laborer,				Park Nos. 2 and 3 Slope,	Park Place,		Small finger cut off; fell under cars.
6	Patrick Malloy,	Miner,				William Penn,	Shaft,		Leg broken by fall of coal.
10,	Patrick McNulty,	Driver,				West Shenandoah,	Shenandoah,		Leg severely cut
14,	Patrick Ryan,	Miner,				Knickerbocker,	Yatesville,		Leg broken by fall of top slate.
14,	Joseph Casper,	do.				Bear Run,	St. Nicholas,		Leg broken by fall of top coal.
14,	John W. Hesser,	do.				Kohinoor,	Shenandoah,		Leg broken by fall of top coal.
15,	Charles Herbine,	Loader,				West Shenandoah,	do.		Knee cap split.
21,	John Beveredge,	Miner,				Henry Brook No. 5,	Audenreid,		Injured by a fall.
25,	John Botham,	Door boy,	15			Packer No. 4,	Lost Creek,		Leg broken and arm crushed by jumping on moving cars.
26,	Robert Fishburn,	Miner,				Shenandoah City,	Shenandoah,		Back and hips bruised by fall of coal.
31,	Arthur Trezise,	do.	28	Married,		Gilberton,	Gilberton,	Jan. 31,	Hands and face burned by powder; a spark from lamp fell into the keg.
31,	Joseph Stremus,	Laborer,				do.	do.	Jan. 31,	Hands and face burned under the same circumstances as Trezise.
31,	Edward Genst,	do.	20	Single,		Kehley's Run,	Shenandoah,		Leg broken by fall of coal.
Feb. 4,	John Morris,	do.				Honey Brook Nos. 1 & 4 Slope,	Audenreid,		Leg broken by fall of coal.
5,	Henry H. Becker,	Miner,				Glendon,	Mahanoy,		Shoulder dislocated by fall of coal.
7,	Thomas Williams,	do.				William Penn,	Shaft,		Leg broken by fall of coal.
8,	John Cohoon,	Carpenter,	64	Married,	6	Girard,	Girardville,	Feb. 8,	Leg broken by boiler explosion.
16,	Ed. Brehney,	Miner,	38	do.	4	North Laurel Ridge,	Gilberton,	Feb. 16,	Left hand blown off by explosion of dualin caps.
16,	Stephen Poluski,	do.	24	do.		Ellangowan,	Maple Dale,	Feb. 16,	Leg broken by fall of coal.
17,	Thomas Moody,	do.	40	do.		Suffolk,	St. Nicholas,		Fingers broken; caught between "buggy" and top slate at dump.
22,	Peter Munday,	do.	45	do.		Boston Run,	do.		Ribs broken; fell off cage while being hoisted up slope.
25	Robert Colvert,	do.				Hammond,	Girardville,		Legs squeezed by fall of coal.
25,	John H. Williams,	Driver,	16			West Shenandoah,	Shenandoah,		Arm broken; thrown from mule's back.
28,	Robert Davis,	Miner,				Silver Brook,	Audenreid,		Arm broken; slipped on slope track and fell 20 feet.
Mar. 1,	William Horrix,	do.	30	Married,		Ellangowan,	Maple Dale,		Ribs broken by fall of slate.
1,	William Foley,	Rock dumper,	24	Single,		Knickerbocker,	Yatesville,		Small bone of hand broken; kicked by a mule.

3,	Joseph Alexander,	Laborer,	24	do.		Indian Ridge,	Shenandoah,		Ankle cut by coal rolling on him while loading car.
16,	James Bennett,	Miner,				Silver Brook,	Audenreid,		Leg broken; fell down trial slope.
Apr. 5,	George Bossock,	do.	30			Ellangowan,	Maple Dale,	Apr. 5,	Head cut by fall of top slate.
9,	Joseph Dusto,	Engineer,	30	Married,		Shenandoah City,	Shenandoah,		Leg fractured; his foot was caught in the act of starting his engine.
13,	William Mallons,	Bottom man,				William Penn,	Shaft,		Leg bruised between cars.
16,	Peter Jones,	Miner,				Turkey Run,	Shenandoah,		Leg fractured by fall of coal.
27,	Michael Coakley,	Door boy,	14			Kohinoor,	do.		Arm broken; jammed between cars and door frame.
May 9,	Andrew Brennan,	Miner,				Suffolk,	St. Nicholas,		Rib broken; struck with a drill.
9,	Martin Stantus,	do.				Turkey Run,	Shenandoah,		Leg broken by fall of coal.
10,	Hugh McDonald,	do.	22	Single,		Shenandoah City,	do.		Face, neck and hands burned with powder by trimming his lamp over the powder.
10,	Patrick Dixon,	Driver,	19	do.		do. do.	do.		Body squeezed between cars.
12,	Thomas Butler,	Miner,	44	Married,		do. do.	do.		Collar bone broken and otherwise bruised by fall of coal.
12,	Steve Gushwarra,	Laborer,	44	do.		Turkey Run,	do.		Leg broken by a piece of coal falling on him.
14,	William Crennan,	do.	19	Single,		William Penn,	Shaft,		Arm seriously injured; he fell and car ran over his arm.
16,	John T. Francis,	Miner,	45			Nos. 5 and 10 Slope, Audenreid.	Audenreid,		Cut over the eye and back; injured by fall of slate,
23,	Reese Thomas,	do.				Primrose,	Mahanoy,	May 24	Slightly burned on the arms with fire damp; used his naked lamp.
23,	Joseph Butler,	Driver,	16	Single,		Suffolk,	St. Nicholas,		Collar bone broken; between car and mule.
26,	Peter Petenopsky,	Loader,	28	do.		do.	do.		Foot crushed between sprag and wheel of car.
June 2,	Lewis Bolinski,	Miner,	25	do.		William Penn,	Shaft,		Burned slightly by fire damp; used his naked lamp.
2,	Robert Jones,	do.	37	Married,		Bear Run,	St. Nicholas,		Ankle broken by fall of top slate.
16,	John Surah,	Laborer,	26	Single,		Honey Brook No. 5, Green Mountain.	Audenreid,		Burned severely on face and hands with powder; trying to withdraw a charge.
20,	August Strunk,	Miner,				West Shenandoah,	Shenandoah,		Spine and legs injured by a fall of coal.
27,	A. McAroski,	do.				Gilberton,	Gilberton,		Leg broken by fall of top rock.
July 6,	Patrick Carrol,	do.				Boston Run,	St Nicholas,		Hip bone broken; fell down cage hole.
7,	Steve Mochneche,	do.	44			Ellangowan,	Maple Dale,		Leg broken by fall of top coal.
18,	Jacob Webb,	do	26			Primrose,	Mahanoy,		Slightly burned by explosion of fire-damp.
19,	Patrick Rowan,	do.				Packer No. 5,	Rappahannock,		Slightly burned by premature explosion.
20,	Frank Kieckner,	do.	28	Married,		Elmwood,	Mahanoy,		Burned on face and hands by explosion of fire damp.
21,	John Lynch,	do.	29	do.		Bear Run,	St. Nicholas,		Slightly bruised by fall of top coal.
25,	Chas. Alexander,	do.	38	do.		Ellangowan,	Maple Dale,		Thigh bone broken by fall of top slate.
28,	Thos. Coughlin,	do.	23	Single,		Girard,	Girardville,		Arm broken; struck by a piece of rock from shot.
Aug. 2,	Michael Canfield,	do.				Park Nos. 2 and 3 Slope,	Park Place,		Leg bruised by fall of coal.
5	John Smith,	do.				North Mahanoy,	Mahanoy,		Body bruised by fall of top coal.
13,	Peter Marsden,	Pump engineer,	35	Married,		Schuylkill,	do.		Collar bone broken; jammed between two cars.
18,	Lewis Moll,					Girard Mammoth,	Raven Run,		Leg broken by fall of coal.
27,	Samuel Walter,	Miner,				Springdale,	Park Place,		Leg broken by fall of coal.
29,	George Lawson,	Starter,	30	Married,	6	Draper,	Gilberton,		Foot and hand blown off by explosion of dynamite.

TABLE No. 5—Continued,

Date of accident.	Name of Person Injured.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location—Schuylkill Co.	Date of investigation.	Nature and Cause of Accident in Brief.
Sept. 6,	Joseph Ramsher,	Loader boss,	31			West Shenandoah,	Shenandoah,		Ankle broken; rock rolled down the chute on him.
7,	Thomas Adams,	Miner,	30			North Mahanoy,	Mahanoy,		Leg broken by fall of top coal.
7,	John Cutloe,	Outside laborer,	40	Single,		Suffolk,	St. Nicholas,		Thigh and body squeezed between cars.
9,	Charles Jones,	Driver,	19	do.		Mahanoy City,	Mahanoy,		Leg broken in attempting to jump on moving cars.
9,	Harry Lloyd,	Outside laborer,	16			William Penn,	Shaft,		Leg broken; jammed between cars.
10,	Thomas Coughlin,	Laborer,	20	Single,		Kohinoor,	Shenandoah,		Legs squeezed by fall of coal.
15,	Hugh Sherry,	Starter,	24	do.		Boston Run,	St. Nicholas,		Head cut and body bruised.
15,	Michael Brennan,	Miner,	32	do.		Indian Ridge,	Shenandoah,		Knee dislocated; fell running from a fall of coal.
16,	Patrick Smith,	Slate picker,	15			North Laurel Ridge,	Gilberton,		Leg broken by mine car.
30,	Joseph Lynch,	Miner,				Park Nos. 2 and 3 Slope,	Park Place,		Collar bone broken; between car and tally board.
Oct. 3,	John Robertson,	do.	42	Married,		Knickerboeker,	Yatesville,		Leg fractured; his neighbor workmen fired a shot and did not warn him to get away.
6,	John Sullivan,	do.	40	do.		Mahanoy City,	Mahanoy,		Leg broken by fall of coal.
8,	John Cagus,	Laborer,	30	Single,		Schuylkill,	do.		Burned on hands and face by explosion of fire-damp.
10,	Michael Matthus,	do.				do.	do.		Burned on hands and face by explosion of fire-damp.
10,	George Comets,	do.				do.	do.		Burned on hands and face by explosion of fire-damp.
12,	William Coughlin,	Outside laborer,				Springdale,	Park Place,		Two fingers cut off by a car.
14,	John Prosser,	Miner,	35	Married,		Shenandoah City,	Shenandoah,		Radius fractured and severe contusions by fall of coal.
15,	Charles Zeller,	do.				Primrose,	Mahanoy,		Slightly burned by gas; took his naked lamp into place of work.
15,	Peter Malia,	Jig hand,	16			Indian Ridge,	Shenandoah,		Arm broken by a fall.
18,	Frederick Smith,	Laborer,	31			William Penn,	Shaft,		Shoulder dislocated by fall of top slate.
14,	Mike Birmingham,	Miner,	58			Gilberton,	Gilberton,		Back and shoulder injured by fall of coal.
28,	Al. Sulvanus,	Laborer,	23	Single,		Bear Run,	St. Nicholas,		Arm broken by fall of coal.
Nov. 2,	John Reenfski,	Miner,				Ellangowan,	Maple Dale,		Head and back slightly injured by fall of coal.
3,	Steve Comanckie,	Slate picker,	26	Single,		Springdale,	Park Place,		Arm torn off; he was pushed into roller cogs by a breaker boy.

8,	Moses Davis,	Miner,			Indian Ridge,	Shenandoah,		Leg broken by prop rolling on him.
10,	John Willingham,	do.			Knickerbocker,	Yatesville,		Small bone of foot broken by fall of top rock.
11,	John Carey,	do.			Hammond,	Girardville,		Head and face cut by premature explosion.
11,	Edward Davis,	Fire boss,			Stanton,	Malzeville,		Arm broken; caught between car and timber.
14,	Patrick O'Brien,	Fireman,			Shenandoah City,	Shenandoah,		Rib broken by a fall.
19,	Charles Trinkle,	Outside runner,			West Shenandoah,	do.		Groin injured; dirt dumper fell back on him.
19,	Frank Donavitch,	Outside driver,			Tunnel Ridge	Mahanoy,		Leg broken; the rock in chute rushed on him in starting it.
Dec. 3,	Patrick O'Neal,	Miner,	49		Boston Run,	St. Nicholas.		Leg broken; a piece of coal rolled down "manway" on him.
12,	Daniel Murphy,	do.	27		Elmwood,	Mahanoy,		Leg broken by fall of coal.
12,	Thomas Burns,	do.	40	Single,	Gilberton,	Gilberton,		Leg broken by fall of coal.
12,	John Handzo,	Loader,	25	do.	Glendon,	Mahanoy,		Collar bone broken; was riding between cars and fell off.
14,	Patrick Ward,	Miner,	21		Indian Ridge,	Shenandoah,		Collar bone broken; head and back bruised by fall of top slate.
17,	Manus Tolan,	do.			Park No. 2 Slope,	Park Place,		Legs severely squeezed by fall of coal from "rib."
19,	Joseph Maduski,	Loader,			Park Nos. 2 and 3 Slope,	do.		Squeezed about body; riding between cars.
19,	Patrick Horan,	Miner,			South Laurel Ridge,	Gilberton,		Ankle squeezed by fall of top slate.
20,	John L. Thomas,	do.	35	Married,	Suffolk,	St. Nicholas,		Ribs broken; fell off scaffold into ditch.
22,	George L. Hafner,	Car loader,	24	do.	Shenandoah City,	Shenandoah,		Body squeezed between gondola and coal chute.

SIXTH ANTHRACITE DISTRICT.

Hon. THOMAS J. STEWART,

Secretary of Internal Affairs:

SIR: In compliance with an act of Assembly entitled "An act to provide for the health and safety of persons employed in and about the anthracite coal mines of Pennsylvania, and for the protection and preservation of property connected therewith," approved June 30, 1885, I herewith have the honor of submitting this, my tenth annual report, which contains a list of the persons killed and injured, the number of tons of coal mined and shipped to market, the number of kegs of powder used, number of days worked, number of persons employed, number of mules and horses, number of steam boilers in and about the collieries in the district during the year 1887, and such other information as may be deemed of importance to those employed or interested in the mining and production of coal.

Total production for year 1887,	4,737,622.11
Total production for year 1886,	3,714,519.00
Increase over that of year 1386,	1,023,103.11
Number of employés inside,	9,409
Number of employés outside,	5,384
Total number of employés in district,	14,793
Number of kegs of powder used during year,	113,624
Number of days worked during year,	227¾
Number of mules and horses,	1,707
Number of steam boilers,	935
Number of fatal casualties,	52
Number of non-fatal casualties,	134

Recapitulation of Fatal Casualties.

Falls of coal and roof,	16
Explosions of carbureted hydrogen gas,	1
Suffocated by sudden outbursts of carbureted hydrogen gas,	10
Mine cars and machinery,	11
Explosions of powder,	3

Miscellaneous underground,	8
Miscellaneous over ground,	3
	52

Recapitulation of Non-Fatal Casualties.

Falls of coal and roof,	41
Explosions of carbureted hydrogen gas,	20
Mine cars and machinery,	27
Explosions of powder,	7
Premature blasts,	5
Kicked by mule,	2
Explosion of adualin caps,	1
Miscellaneous underground,	22
Miscellaneous over ground,	9
	134

Yours truly,

JAMES RYAN, *Inspector.*

ASHLAND, *February 25, 1888.*

Prosecutions for not Complying with the Mine Law.

On two occasions I was compelled to enter criminal proceedings to enforce compliance with the mine law.

The first was against William Hutchison, inside foreman of the Mineral Railroad and Mining Company's Luke Fidler Colliery, near Shamokin, Northumberland county, for neglecting to comply with sections three and four, article ten, of act of June 30, 1885.

Section 3 says: "The minimum quantity of air thus produced shall not be less than two hundred (200) cubic feet per minute for each and every person employed in any mine and as much more as circumstances may require."

Section 4 says: "The ventilating currents shall be conducted and circulated to and along the face of each and every working place throughout the entire mine in sufficient quantities to dilute, render harmless and sweep away smoke and noxious or dangerous gases to such an extent that all working places and traveling roads shall be in a fit state to work and travel therein." This he neglected to do. On the night of April 19, 1886, while Joseph Zoborney was at work driving an air hole from No. 1 Slope east gangway up to the No. 1 Slope counter gangway, he was overcome and suffocated by the foul air of the place at the time. The case was tried at the February court in 1887, and was continued to the following June argument court, after which his honor, William A. Rockafeller, president judge of Northumberland county, sentenced Hutchison to pay a fine of fifty dollars and the cost of prosecution.

The second was against Thomas M. Righter and John H. Reilly, superintendent and inside foreman of Mount Carmel Colliery, near Mount Carmel, Northumberland county, for not complying with rules 33 and 42 of act of June 30th, 1885. I consulted my attorney, William H. M. Oram, of Shamokin, in reference to the case. After looking over the aforesaid act he failed to see where Messrs. Righter and Reilly were guilty of a violation, after which I gave up the idea of entering a law suit. Some time afterwards I was served with a written notice (according to section 5 of Article 18), with the names of persons thereon who could prove a violation of the mine law. I then entered suit, a hearing was had before his Honor Judge Rockafeller, of Northumberland county, in February, 1887, the case was continued owing to the principal witness being at the time under medical treatment in the Miners' Hospital; on January 5, 1888, the case was to be called for trial again, but, on account of some misunderstanding in notifying the defense, and the same witness being in the Miners' Hospital, the case was continued.

Ventilation.

It affords me pleasure to state that the general condition of the collieries of the district are good. There have been nine (9) fans erected during the year. Two twenty-five-foot fans at the Lykens Valley Coal Company's Lykens Valley Colliery near Lykens, Dauphin county, to take the place of two smaller size fans. One twenty-five-foot fan in course of erection at the Summit Branch Railroad Company's Williamstown Colliery, to take the place of a fifteen-foot fan; one twelve-foot fan at S. S. Beckel & Co.'s Bellmon Colliery, to ventilate the north dip workings; one fifteen-foot fan at William L. Scott & Co.'s Hickory Ridge Colliery, to ventilate the north dip workings; one ten-foot fan at Smith and Keiser's Lancaster Colliery; one twenty-one-foot fan at J. Langdon and Company's Neilson Colliery; and one twenty-one-foot fan at the Philadelphia and Reading Coal and Iron Company's Henry Clay Colliery, and another fifteen-foot fan at the same company's Big Mountain Colliery, making a total of sixty-five (65) fans at the forty-four colleries. Together with this there are marked improvements made and are still being made in the mode of timbering main openings, such as slopes, gangways, and air courses, with heavier and stronger timbers, notably among the collieries where these improvements are made are individual collieries which have came into the possession of the Philadelphia and Reading Coal and Iron Company at the expiration of the lease. Also at the Mineral Railroad and Mining Company's Luke Fidler and Cameron Colleries, the Union Coal Company's Hickory Ridge and Pennsylvania Colleries.

List of applicants who received certificates of qualification in the

Sixth Anthracite Mining District, in 1887, as provided by Article 8 of act of June 30, 1885:

James Sterling, ... Shamokin, Northumberland county, Pa.
Paul Phillips, ... Girardville, Schuylkill county, Pa.
Benjamin Evans, . . . Girardville, Schuylkill county, Pa.
William J. Thomas, . . Girardville, Schuylkill county, Pa.
Thomas Bond, ... Williamstown, Dauphin county, Pa.
Alfred Ayres, ... Mount Carmel, Northumberland county, Pa.

Accidents.

I regret to state that the number of fatal casualities for the year were more than that of any year previous during my term of office with the exception of the years 1883 and 1884. The total number of casualities, fatal and non-fatal, have been reduced from that of previous years with the exception of the years 1885 and 1886. In comparing the number of tons of coal mined to each casuality, I find there have been on an average three thousand six hundred and twenty-eight tons more coal mined to each casuality than have been in previous years. Owing to the various ways by which accidents occur, it behooves both employés and those in charge of mines to exercise all the care and prudence possible to avert these sad occurrences. The total number of serious accidents during year 1887, were one hundred and eighty-six, fifty-two of which were fatal, leaving twenty-seven widows and ninety-nine orphans. The dangers attending the mining of coal are on the increase on account of the mines becoming deeper and more extensive. Taking this into consideration, if the number of tons of coal mined to each casualty compared favorably with past years, it is an improvement in the system of mining coal. We are however of the opinion that if more care and a closer observance of the mine law were had by those dependent on toil in the bowels of the earth for a livelihood, we would not be called upon as often to witness the sad sight of weeping wives and children for the loss of husbands and fathers.

The mine law makes provision against this as well as other classes of accidents, and until such time as the workingmen avail themselves of the provisions of the law, we cannot expect to be enabled to report this class of accidents things of the past. Hoping that in the near future men whose daily avocation is of such a dangerous character will realize that fact and use every precaution at their disposal to avert accidents to themselves and others intrusted to their care.

Falls of Coal and Roof.

There were sixteen (16) lives lost from the above causes during the year out of a total of fifty-two (52), being about thirty and ten thirteenths ($30\frac{10}{13}$) per cent. of the total number of fatal casualties. The number of non-fatal accidents from the same source was forty-one

(41), being thirty and forty-sixty-sevenths ($30\frac{4}{6}^{0}$) per cent. of the whole number of non-fatal casualities. In reviewing the accidents under this head, I found a large percentage of them due to negligence, or recklessness on the part of the victims themselves. In our inspection of the colleries of the district we came across instances of this character, some of those who rely too much on their own knowledge. In other cases I find a large percentage of this class of accidents due to incompetency or inexperience.

Electricity in use as a Motive Power for Underground Mine Haulage.

For several years electricity has been used to perform many of the duties formerly delegated to steam power and has been proven in Europe to be an effective, economical and safe power for use in mining operations. In this country aside, from the use of the telephone and electric signal bells, in mines, it has been applied to practical use as far as we know of in but one instance and that very recently. To the Lykens Valley Coal Company belongs the honor of being the first party to put this power to practical use at their Lykens Valley Colliery in Wiconisco township, Dauphin county, situated in the western end of the Southern Anthracite Coal Field of Pennsylvania. The system in use at this colliery is known as the Schlessinger system, it is at present used to run an electrical locomotive to haul coal from a water-level workings to the surface. The machinery employed there consists of a second-hand ordinary horizontal steam engine with an eighteen-inch cylinder and forty-eight-inch stroke attached to which is a belt wheel nine feet six inches in diameter, with a fifteen-inch face. On this is a leather belt turning a smaller wheel on a counter shaft. which has attached to it an additional belt wheel. From this wheel another belt turns the smaller wheel fifteen inches in diameter on the dynamo or generator, which is similar in construction and principles of working to all those used in generating electricity. The space taken up by the dynamo is very small. Its dimensions in the clear being but three feet six inches by four feet high, including sixteen inches in heighth of foundations that extend above the floor of the generator room. The belt wheel on the engine is run at the rate of sixty revolutions per minute, and by the use of the small belt wheel on the counter shaft. The belt wheel on the dynamo runs at a speed of seven hundred revolutions per minute. The electricity is carried to the conductor by insulated copper wires, and is carried along this conductor as far as the locomotive is required to run. The conductor consists in this case of an ordinary iron T rail weighing about twenty-five pounds per yard, though a sixteen pound rail would answer the purpose as well. The conductor is carried outside along buildings and supports parallel to the track at a vertical height of about five feet and at a distance horizontally from the rail of about twenty inches.

It is insulated by having a small piece of ordinary sheet gum placed between the rail and support. And the rails are made continuous by being bolted together with fish plates between which and the rail are placed small pieces of sheet brass. Inside in the drift the conductor is carried along the low side and by being fastened to small props specially put in for this purpose where there is no timbering. At several points along the gangway as well as to the entrance of the drift, the height of the conductor above the rail of necessity varies, this is remedied by putting in a few feet of the conductor on an incline thus joining the sections at different heights. The return current is carried back by the regular rails of the track which are exactly similar to any ordinary track excepting that the rail joints are made continuous by fish plates and the additions of sheet brass between the fish plates and rails, as in the conductor, so as to prevent the breaking of the current when the road needs repairing. At distances of about three hundred feet the two rails of the track are connected by copper wire, so that if necessary to take out a rail the current is carried out by the rail on the other side of the track. The locomotive consists of an electric motor, to which the power is transmitted, and then converted from the electrical to the mechanical form, and by the turning of a small cog wheel, motion is imparted to an endless chain that turns a large cog wheel which in turn imparts motion to the driving wheels. Aside from the running gear the motor is very small and compact. The motor and running gear weigh 1,500 pounds, but to secure sufficient adhesion on the rails necessary to haul its load the locomotive is weighted down to 15,000 pounds. As the running gear is simple in its construction and made according to simple mechanical principles it can be made of almost any size as regards height and gauge, and the motor itself taking up so little space together with the fact that lead ballast, if necessary could be used, makes this style of locomotive especially adapted to work in small veins where the use of an ordinary locomotive would be impracticable. There is no trouble to make this style of a motor small enough for any purpose, as the greatest space taken up in its construction, when specially designed for small openings is the space reserved for the driver or engineer. The locomotive can be run by any young man of average intelligence, and is controlled by levers that are worked similar to those of a steam engine. The force of the electrical current carried through the motor is regulated by the driver or engineer, who is guided by a small electric light that burns either dimly or brightly according to the strength of the current. That portion of the workings in which the locomotive is working is a water-level opening or drift in the "Whites" vein, which is a small vein varying from three and one-half feet to five feet thick, lying from eighteen to twenty yards square, with the measures above what is known as the Upper or Big Lykens Valley vein. The locomotive runs in the drift a distance of about 4,800 feet, and thence through

a tunnel sixty yards long, connecting this gangway with the workings in the Upper and Lower Lykens Valley veins to a turnout in the gangway in the Lower Lykens Valley vein, at about 1,200 feet from the tunnel, there is a twenty-foot 90° and a thirty-foot 90° curve at the junction of the tunnel with the gauge. The gauge of the track is forty inches, and the grade three inches in one hundred feet in favor of the load along most of the way, but there are several places where, for some distance, this grade is reversed and at other places the road is a dead level. The load that is to be hauled consists of twenty-one mine cars, of about ninety cubic feet capacity each, and the largest load the motor has already taken out consisted of thirty-one cars weighing almost one hundred and fifty tons. The length of the train was about three hundred and eighty feet, and the distance between the above-mentioned curves being only one hundred and eighty feet, the motor had to haul this train for a distance of two hundred feet around both curves at the the same time.

The dynamo in use is of fifty horse-power capacity, but only thirty horse-power is transmitted to the motor on the locomotive. The engine running the generator has power enough to run another dynamo of same size, and each of these in turn is capable of furnishing motor power to two locomotives of same size as the one now in use. The room to contain this machinery on the surface need not cover an area larger than thirty feet by fifteen feet, and there will be ample room. Outside of its greater economy the electric mine locomotive has other great advantages over the steam locomotive, and over mules; its greatest feature is the entire absence of smoke, steam and gas, the non-consumption of oxygen. For this reason the Lykens Valley Coal Company, I am informed, have decided to replace a steam locomotive now used in hauling coal from the west side lower level of the Short Mountain slope by a second electric motor which will in a short time be in operation.

The following table shows the relation between the roads in Europe and America:

WHERE RUNNING.	System.	Length.	Speed.	Weight of locomotive.	Largest weight pulled.
		Feet.	*Miles.*	*Lbs.*	*Tons.*
Zankasoda, ...	Semens & Halski, . .	2,028	6	3,520	13½
Paulus and Hohenzoller, .	Semens & Halski, . .	2,460	. . . .	4,200	. . . .
Lykens Valley, ...	Shlessinger, ...	6,300	6 to 8	15,000	150

Number of fatal accidents and amount of coal produced per life lost by the different companies and individual firms during year 1887.

OPERATORS.	Number of tons of coal produced.	Number of fatal casualties.	Amount of coal produced per life lost.
Philadelphia and Reading Coal and Iron Co., .	2,075,913.00	30	69,197 1/10 tons.
Mineral Railroad and Mining Company, ...	239,860.01	2	119,930 "
Union Coal Company, ...	521,614.07	2	280,807 "
Summit Branch Railroad Company, ...	388,291.04	1	388,291 "
Lykens Valley Coal Company, ...	237,417.00	3	79,139 "
Lewis A. Riley & Co., ...	395,341.14	3	131,780 1/2 "
Individual firms, ...	879,185.05	11	79,926 "

COMPARATIVE STATEMENT of casualties, coal tonnage and employés of the Sixth Anthracite Mining District of Pennsylvania for the years 1883, 1884, 1885, 1886 and 1887.

Years.	Killed.	Injured.	Total.	Total number of employés.	Number of employés to each casualty.	Total number of tons coal mined.	Number of tons of coal mined to each fatal casualty.	Number of tons of coal mined to each non-fatal casualty.	Number of tons of coal mined to each casualty.	Number of tons of coal mined to each employé.
1883,	64	170	234	14,588	62.4	4,813,162.12	75,205.14	28,312.15	20,141.14	329.18
1884,	56	174	230	15,568	67.3	4,535,051.13	80,983.01	26,063.10	19,717.12	291.06
1885,	45	136	181	14,202	78.4	4,205,420.17	93,453.15	30,922.04	23,234.07	296.02
1886,	31	122	153	14,414	94.3	3,714,519.11	119,823.04	30,445.04	24,277.18	243.16
1887,	52	134	186	14,793	79.5	4,737,622.11	91,108.06	35,355.10	25,471.08	320.05

TABLE showing the grand total of employés, mules, steam-boilers and powder used, tons of coal mined and shipped, fatal and non-fatal casualties in the Sixth Anthracite District for the year ending December 31, 1887.

Names of Counties and parts of Counties in the District.	Total number of employés.	Total number of mules and horses employed.	Total number of steam-boilers in use.	Total number of kegs of powder used.	Total number of tons of coal mined.	Total number of tons of coal shipped.	Total number of fatal casualties.	Total number of non-fatal casualties.
Northumberland county,	9,320	1,028	493	72,811	2,844,386.12	2,613,486.14	26	84
Schuylkill county,	1,317	208	127	4,736	527,210.18	505,615.15	14	13
Columbia county,	1,944	207	146	21,329	740,316.17	703,707.18	8	21
Dauphin county,	2,212	264	169	14,748	625,708.04	536,420.09	4	16
Total,	14,793	1,707	935	113,624	4,737,622.11	4,359,230.16	52	134

TABLE No. 1.—Showing location of collieries in the Sixth Anthracite Mine District.

NAME OF COLLIERY.	NAME OF OPERATOR.	LOCATION—COUNTY.	NAME OF SUPERINTENDENT.	POST-OFFICE ADDRESS.
Mt. Carmel shaft,	Phila. & Reading Coal and Iron Co.,	Mt. Carmel twp., Northumb'd co.,	Monroe T. Schreffler,	Ashland, Schuylkill county.
East,	do. do. do.	Big Mine Run, Schuylkill county,	John Carl,	Mt. Carmel, Northumb'd county.
Bear Valley,	do. do. do.	Coal twp., Northumberland co.,	William Boothe,	Shamokin, Northumb'd county.
Burnside,	do. do. do.	do. do.	do.	do. do.
Sterling,	do. do. do.	do. do.	do.	do. do.
Peerless,	do. do. do.	do. do.	do.	do. do.
Henry Clay,	do. do. do.	do. do.	do.	do. do.
Big Mountain,	do. do. do.	do. do.	do.	do. do.
Buck Ridge,	do. do. do.	do. do.	do.	do. do.
Reliance,	do. do. do.	Mt. Carmel twp., Northumb'd co.,	John Carl,	Mt. Carmel, Northumb'd county.
Locust Gap,	do. do. do.	do. do.	Monroe T. Schreffler,	Ashland, Schuylkill county.
Locust Spring,	do. do. do.	do. do.	do.	do. do.
Monitor,	do. do. do.	do. do.	do.	do. do.
Merriam,	do. do. do.	do. do.	John Carl,	Mt. Carmel, Northumb'd county.
North Franklin No. 1,	do. do. do.	Trevorton, Northumberland co.,	William Boothe,	Shamokin, Northumb'd county.
North Franklin No. 2,	do. do. do.	do. do.	do.	do. do.
Keystone,	do. do. do.	Locust Dale, Schuylkill county,	John Carl,	Mt. Carmel, Northumb'd county.
Tunnel,	do. do. do.	Ashland, do.	do.	do. do.
North Ashland,	do. do. do.	Conyngham twp., Columbia co.,	do.	do. do.
Preston No. 2,	do. do. do.	Girardville, Schuylkill county,	Elijah Gregory,	Girardville, Schuylkill county.
Preston No. 3,	do. do. do.	do. do.	do.	do. do.
Williamstown,	Summit Branch Railroad Company,	Williamstown, Dauphin county,	Thomas M. Williams,	Lykens, Dauphin county.
Short Mountain and Lykens Valley,	Lykens Valley Coal Company.	Wiconisco, Dauphin county,	do. do.	do. do.
Cameron,	Mineral Railroad and Mining Co.,	Shamokin, Northumberland co.,	Edwin Ludlow,	Shamokin, Northumb'd county.
Luke Fidler,	do. do.	do. do.	do.	do. do.
Hickory Swamp,	Union Coal Company,	Coal twp., Northumberland co.,	Holden Chester,	do. do.
Hickory Ridge,	do. do.	do. do.	do.	do. do.
Pennsylvania,	do. do.	do. do.	do.	do. do.
Lancaster,	Smith & Keiser,	do. do.	William Smith,	do. do.
Garfield,	Garfield Coal Company, Limited,	do. do.	William H. Douty,	do. do.
Royal Oak,	Tillet & Brother,	Shamokin, Northumberland co.,	Jonas Tillet,	do. do.
Neilson shaft,	J. Langdon & Co.,	do. do.	A. H. Storrs,	do. do.
Excelsior,	Excelsior Coal Mining Company,	Coal twp., do.	A. Robertson,	do. do.
Enterprise,	Enterprise Coal Company,	do. do.	F. J. Morgan,	do. do.
Mount Carmel,	Thomas M. Righter & Co.,	Mt. Carmel twp., Northumb'd co.,	Thomas M. Righter,	Excelsior, Northumb'd county.
Big Mine Run,	Jeremiah Taylor Estate,	Big Mine Run, Schuylkill county.		Mt. Carmel, Northumb'd county.
Logan,	Lewis A. Riley & Co.,	Centralia, Columbia county,	Edward Reese,	Centralia, Columbia county.
Centralia,	do. do.	do. do.	do.	do. do.
Hazle Dell,	do. do.	do. do.	do.	do. do.
Continental,	Lehigh Valley Coal Company,	Conyngham, Columbia county,	David P. Brown,	Lost Creek, Schuylkill county.
Morris Ridge,	May, Troutman & Co.,	do. do.	James May,	Shamokin, Northumb'd county.
Bellmon,	S. S. Bickel & Co.,	do. do.	Tobias Bickel,	Mt. Carmel, Northumb'd county.

TABLE No. 2.—Gives the total number of tons of coal mined and tons of coke produced in each colliery, number of days worked, number of employés, number of persons killed and injured, number of kegs of powder used, &c., in the Sixth Anthracite Mining District for the year ending December 31, 1887.

Names of Collieries.	Location.	Total production in tons of coal.	Total shipment in tons of coal.	No. days worked.	No. persons employed.	No. fatal accidents.	No. non-fatal accidents.	No. kegs powder used.	No. steam boilers.	No. horses and mules.	No. mine locomotives.
North Franklin No. 2,	Trevorton, Northumberland county,	99,859.08	95,103.11	191 11/20	240	1	1	2,050	10	39	1
Bear Valley,	Coal township, do. do.	142,795.04	135,995.09	242 1/2	216	. . .	2	2,565	22	39	1
Burnside,	do. do. do.	114,012.17	108,583.02	241 1/4	456	2	8	2,940	12	43	. . .
Henry Clay,	do. do. do.	271,550.00	258,619.12	260 13/20	374	. . .	3	8,200	32	172	2
Buck Ridge,	do. do.	. . . . .	. . . . .	. . . . .	21	. . .	. . .	. . . . .	16	3	. . .
Alaska Shaft,	Mt. Carmel twp., do. do.	201,714.10	192,109.06	219 8/20	535	. . .	3	3,850	33	69	2
Locust Gap,	do. do. do. do.	146,591.12	139,611.05	248 15/20	245	. . .	. . .	3,248	16	29	1
Locust Spring,	do. do. do. do.	131,282.14	125,031.15	241 12/20	425	1	5	4,275	20	49	1
Reliance,	do. do. do. do.	122,525.12	116,691.05	239 1/2	268	2	. . .	2,950	16	36	. . .
Merriam,	do. do. do. do.	179,604.15	171,052.03	239 8/20	397	4	. . .	3,125	26	47	. . .
Potts,	Conyngham township, Columbia county,	. . . . .	. . . . .	. . . . .	1	. . .	1	. . . . .	. . .	. . .	. . .
Keystone,	Locust Dale, Schuylkill county,	92,386.07	87,986.10	235 3/4	195	. . .	. . .	130	16	31	. . .
Locust Run,	Conyngham township, Columbia county,	. . . . .	. . . . .	. . . . .	9	. . .	. . .	. . . . .	15	. . .	. . .
Bast,	Big Mine Run, Schuylkill county,	89,679.14	85,409.04	231 3/4	245	5	2	1,219	24	47	. . .
North Ashland,	Conyngham township, Columbia county,	160,587.04	152,940.06	247 3/20	304	1	2	2,550	24	44	1
Preston No. 2,	Girardville, Schuylkill county,	. . . . .	. . . . .	. . . . .	9	. . .	. . .	. . . . .	14	5	. . .
Preston No. 3,	do. do. do.	106,051.10	101,001.02	263 8/20	203	. . .	5	300	22	41	1
Monitor,	Mt. Carmel township, Northumberland county,	139,111.13	132,439.13	215 9/20	313	1	4	3,000	16	47	. . .
Tunnel,	Ashland, Schuylkill county,	78,160.00	74,438.02	193 16/20	167	6	3	50	26	34	. . .
Big Mountain,	Coal township, Northumberland county,	. . . . .	. . . . .	. . . . .	640	4	13	. . . . .	12	. . .	. . .
Sterling,	do. do. do.	. . . . .	. . . . .	. . . . .	153	. . .	3	. . . . .	12	. . .	. . .
Peerless,	do. do. do.	. . . . .	. . . . .	. . . . .	169	3	3	. . . . .	. . .	. . .	. . .
North Franklin No. 1,	Trevorton, do. do.	. . . . .	. . . . .	. . . . .	. . .	. . .	. . .	. . . . .	2	. . .	. . .
Williamstown,	Williamstown, Dauphin county,	388,291.04	338,926.13	201 8/10	1,194	1	10	10,856	76	134	4
Short Mountain and Lykens Valley,	Wiconisco twp., do. do.	237,417.00	197,493.16	283 2/10	1,018	3	6	3,892	93	130	*3

Note.—The Big Mountain, Peerless and Sterling coal is prepared in the Henry Clay Breaker.
* Also 1 electric motor.

TABLE No. 2—Continued.

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Total shipment in tons of coal.	No. days worked.	No. persons employed.	No. fatal accidents.	No. non-fatal accidents.	No. kegs powder used.	No. steam boilers.	No. horses and mules.	No. mine locomotives.
Cameron,	Shamokin, Northumberland county,	116,903.15	101,680.15	114	867	1	4	5,997	39	87	. . .
Luke Fidler,	do. do. do.	122,951.06	113,701.06	139 1/16	532	1	2	2,381	30	40	1
Hickory Swamp,	Coal twp., do. do.	87,543.13	81,722.13	233 3/4	386	1	4	2,442	15	38	. . .
Hickory Ridge,	do. do. do.	48,943.17	44,543.17	240 1/4	229	. . .	. . .	1,621	18	19	. . .
Lancaster,	do. do. do.	21,968.03	21,117.18	210 1/2	86	. . .	1	1,093	3	13	. . .
Garfield,	do. do. do.	26,191.00	26,101.05	171 9/16	115	. . .	1	986	10	13	. . .
Excelsior,	do. do. do.	183,115.01	177,467.01	274 1/16	389	1	2	5,600	21	43	. . .
Enterprise,	do. do. do.	124,520.00	116,349.00	250 3/4	706	. . .	1	2,743	33	44	*2
Pennsylvania,	Mt. Carmel township, Northumberland county,	335,126.17	291,126.17	253 7/16	832	1	16	8,353	40	83	*2
Mount Carmel,	do. do. do. do.	153,269.05	145,970.15	234 1/16	346	. . .	. . .	4,561	21	39	*1
Royal Oak,	Shamokin do. do. do.	245.11	147.01	160	4	. . .	. . .	6	1	1	. . .
Neilson,	do. do. do. do.	19,251.19	15,316 05	299	356	3	8	1,425	14	30	. . .
Bellmon,	Conyngham do. Columbia county,	93,482.02	92,306 02	218 2/16	313	3	5	2,385	15	29	. . .
Morris Ridge,	do. do. do. do.	90,905.17	87,905.17	257 1/2	237	1	3	2,249	8	21	. . .
Logan,	Centralia do. do. do.	205,916.06	194,606.16	240 13/16	533	2	4	8,663	32	48	*1
Centralia,	do. do. do. do.*	189,425.08	175,948.17	242 2/16	532	. . .	2	5,482	30	64	*1
Hazle Dell,†	do. do. do. do.	. . . . .	. . . . .	. . . . .	. . . . .	1	4	. . . . .	. . .	. . .	. . .
Continental,‡	Conyngham do. do. do.	. . . . .	. . . . .	. . . . .	15	. . .	. . .	. . . .	22	1	*1
Big Mine Run,	Big Mine Run, Schuylkill county,	160,933,07	156,780.17	249 3/4	498	3	3	3,037	25	50	*2
Total,		4,737,6.2.11	4,859,230.16	227 3/4	14,793	52	134	113,624	935	1,707	28

*Outside. †Coal tonnage, etc., included in Centralia Colliery report. ‡Colliery idle during year. Pumping water.

TABLE No. 3.—Showing the number of each class of employés at each colliery in the Sixth Anthracite Mine District, during the year 1887.

NAMES OF COLLIERIES.	LOCATION.	NUMBER OF PERSONS EMPLOYED INSIDE.							NUMBER OF PERSONS EMPLOYED OUTSIDE.							GRAND TOTALS—INSIDE AND OUTSIDE.
		Inside foreman or mine boss.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Doorboys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers	All company men.	Superintendent, bookkeepers and clerks.	Total outside.	
N. Franklin No. 2,	Trevorton, Northumberland county,	1	99	27	. . .	19	4	150	1	5	8	74	. . .	2	90	240
Bear Valley,	Coal township, do. do.	1	100	11	. . .	14	8	134	1	4	13	63	. . .	1	82	216
Burnside,	do. do. do.	1	210	75	. . .	24	10	320	1	6	14	114	. . .	1	136	456
Henry Clay,	do. do. do.	1	9	13	. . .	1	. . .	24	3	20	32	293	. . .	2	350	374
Buck Ridge,	do. do. do.	. . .	2	6	. . .	. . .	. . .	8	1	2	10	. . .	. . .	. . .	13	21
Alaska Shaft,	Mt. Carmel twp., do. do.	2	213	40	. . .	66	21	342	2	8	16	166	. . .	1	193	535
Locust Gap,	do. do. do.	1	123	4	. . .	14	7	149	1	4	13	77	. . .	1	96	245
Locust Spring,	do. do. do.	1	194	86	. . .	21	6	308	1	5	15	95	. . .	1	117	425
Reliance,	do. do. do.	1	107	19	. . .	23	3	153	1	5	8	100	. . .	1	115	268
Merriam,	do. do, do.	1	159	39	. . .	23	20	242	2	6	18	128	. . .	1	155	397
Potts,	Conyngham twp., Columbia county,	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1	. . .	. . .	. . .	1	1
Keystone,	Locust Dale, Schuylkill county, . . .	1	51	15	. . .	10	13	90	1	4	13	86	. . .	1	105	195
Locust Run,	Conyngham twp., Columbia county,	. .	. . .	. . .	. . .	. . .	. . .	. . .	1	. . .	8	. . .	. . .	. . .	9	9
Bast,	Big Mine Run, Schuylkill county, . .	2	92	23	. . .	15	10	142	1	6	17	78	. . .	1	103	245
North Ashland,	Conyngham twp., Columbia county,	1	93	26	. . .	13	5	143	1	11	19	129	. . .	1	161	304
Preston No. 2,	Girardville, Schuylkill county, . . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1	1	6	. . .	. . .	1	9	9
Preston No. 3,	do. do. . . .	1	74	1	. . .	16	7	99	1	4	18	80	. . .	1	104	203
Monitor,	Mt. Carmel twp., Northumberland co.,	2	126	39	. . .	19	7	193	1	5	9	104	. . .	1	120	313
Tunnel,	Ashland, Schuylkill county, ...	1	30	19	. . .	14	9	73	1	5	22	65	. . .	1	94	167
Big Mountain,	Coal twp., Northumberland county,	5	358	180	. . .	66	26	635	. . .	. . .	5	. . .	. . .	. . .	5	640
Stirling,	do. do. do.	1	104	21	. . .	7	8	141	1	3	8	. . .	. . .	. . .	12	153
Peerless,	do. do. do.	. . .	126	25	. . .	16	. . .	167	. . .	. . .	2	. . .	. . .	. . .	2	169
Williamstown,	Williamstown, Dauphin county, . . .	1	317	113	240	107	25	803	1	20	31	178	158	3	391	1,194
Short Mountain and Lykens Valley,	Wiconisco twp., do. do. . . .	4	233	163	141	75	28	644	3	22	42	108	196	3	374	1,018
Cameron,	Shamokin, Northumberland county.	3	304	31	164	46	19	567	1	15	21	138	121	4	300	867
Luke Fidler,	do. do. do.	2	139	52	99	40	10	342	1	3	12	104	62	3	190	532
Hickory Swamp,	Coal twp., do. do.	1	138	34	51	16	5	244	1	5	7	62	61	3	142	386
Hickory Ridge,	do. do. do.	1	67	15	26	21	4	134	1	6	10	30	57	1	105	239
Lancaster,	do. do. do.	1	40	6	6	4	. .	57	1	1	2	19	6	. . .	29	86
Garfield,	do. do. do.	1	41	10	13	3	2	70	1	2	6	20	14	2	45	115

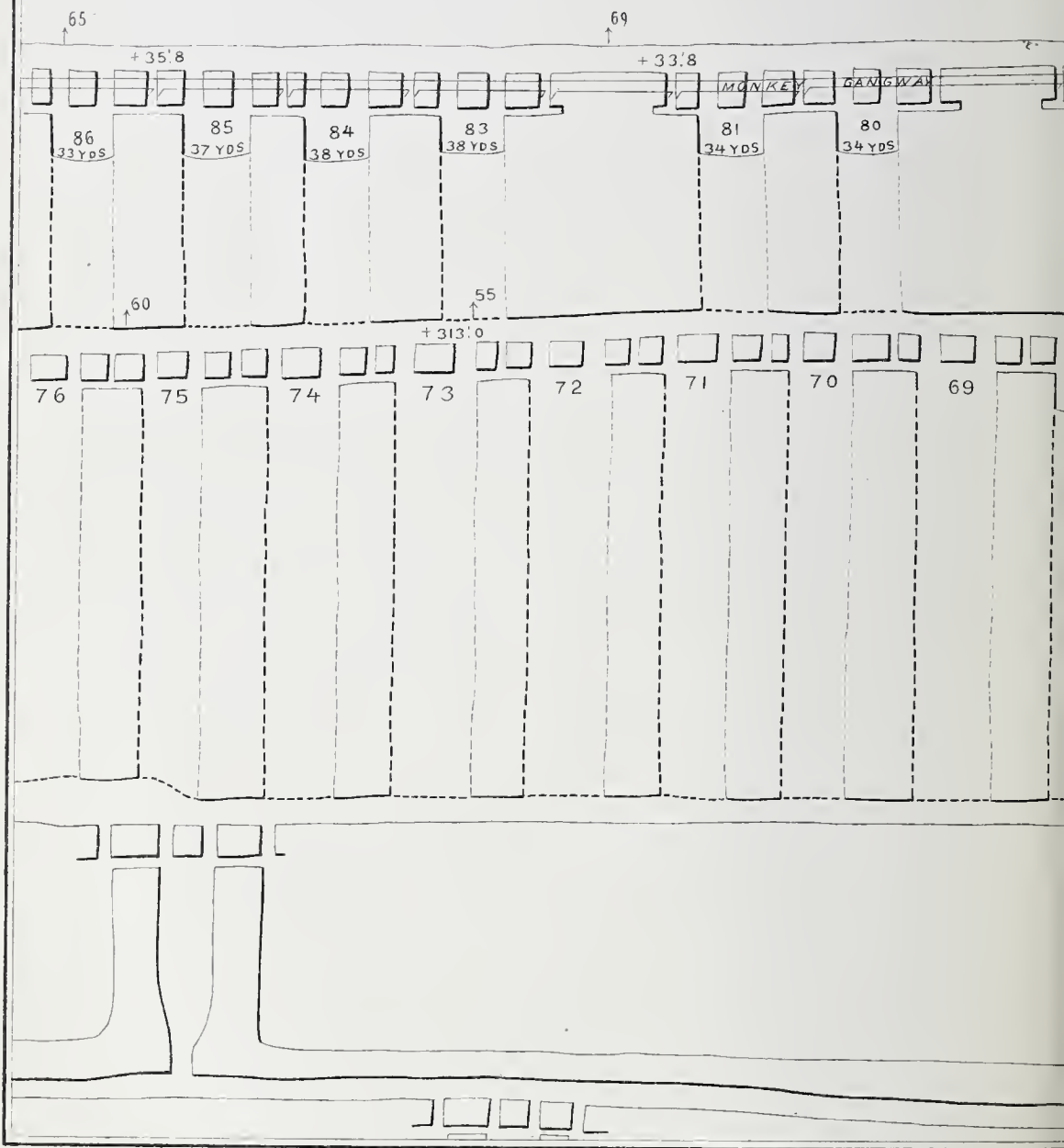
TABLE No. 3—Continued.

NAMES OF COLLIERIES.	LOCATION.	NUMBER OF PERSONS EMPLOYED INSIDE.							NUMBER OF PERSONS EMPLOYED OUTSIDE.							GRAND TOTALS—INSIDE AND OUTSIDE.
		Inside foreman or mine boss.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Doorboys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All company men.	Superintendent, bookkeepers and clerks.	Total outside.	
Excelsior,	Coal twp., Northumberland county,	2	143	65	18	13	3	249	2	5	8	74	49	2	140	389
Enterprise,	do. do. do.	2	178	137	130	15	6	474	2	9	17	80	120	4	232	706
Pennsylvania,	Mt. Carmel twp., do. do.	1	323	92	123	39	27	605	1	7	16	95	107	1	227	832
Mount Carmel,	do. do. do.	1	137	35	28	20	8	229	1	5	12	69	36	4	127	356
Royal Oak,	Shamokin, do. do.	. . .	2	. . . .	. . .	. . .	. . .	2	. . .	. . .	1	. . . .	. . .	1	2	4
Neilson,	do. do. do.	1	126	18	76	9	6	236	1	8	15	53	40	3	120	356
Bellmon,	Conyngham twp., Columbia county,	2	90	20	63	8	7	190	1	7	11	51	49	4	123	313
Morris Ridge,	do. do. do.	1	65	36	40	5	2	149	1	3	4	56	21	3	88	237
Logan,	Centralia, do. do.	2	151	50	86	19	11	319	1	13	20	97	79	4	214	533
Centralia,	do. do. do.	2	122	48	96	17	7	292	1	10	21	103	101	4	240	532
Hazle Dell,	do. do. do.	Num	ber of	emplo	yes i	nclu	ded i	n the C	entra	lia C	ollie	ry rep	ort.			
Continental,	Conyngham twp., do. do.	1	1	. . . .	2	. .	. . .	4	1	2	6	. . . .	3	. . .	11	15
Big Mine Run,	Big Mine Run, Schuylkill county, . .	1	142	40	72	19	12	286	1	6	10	134	58	3	212	498
Total,	. . . . .	54	5,029	1,634	. .	867	346	9,409	46	258	517	3,123	. . .	70	5,384	14,793

Sketch-Showing Portion Of The Workings On Th
Mammoth Vein West Gangway Third Lift At Tunnel
Colliery.

Scale 1 Inch = 100 Feet.

F. P. Weiser, Ass't. Eng'r
P. & R. C. & I. Co.



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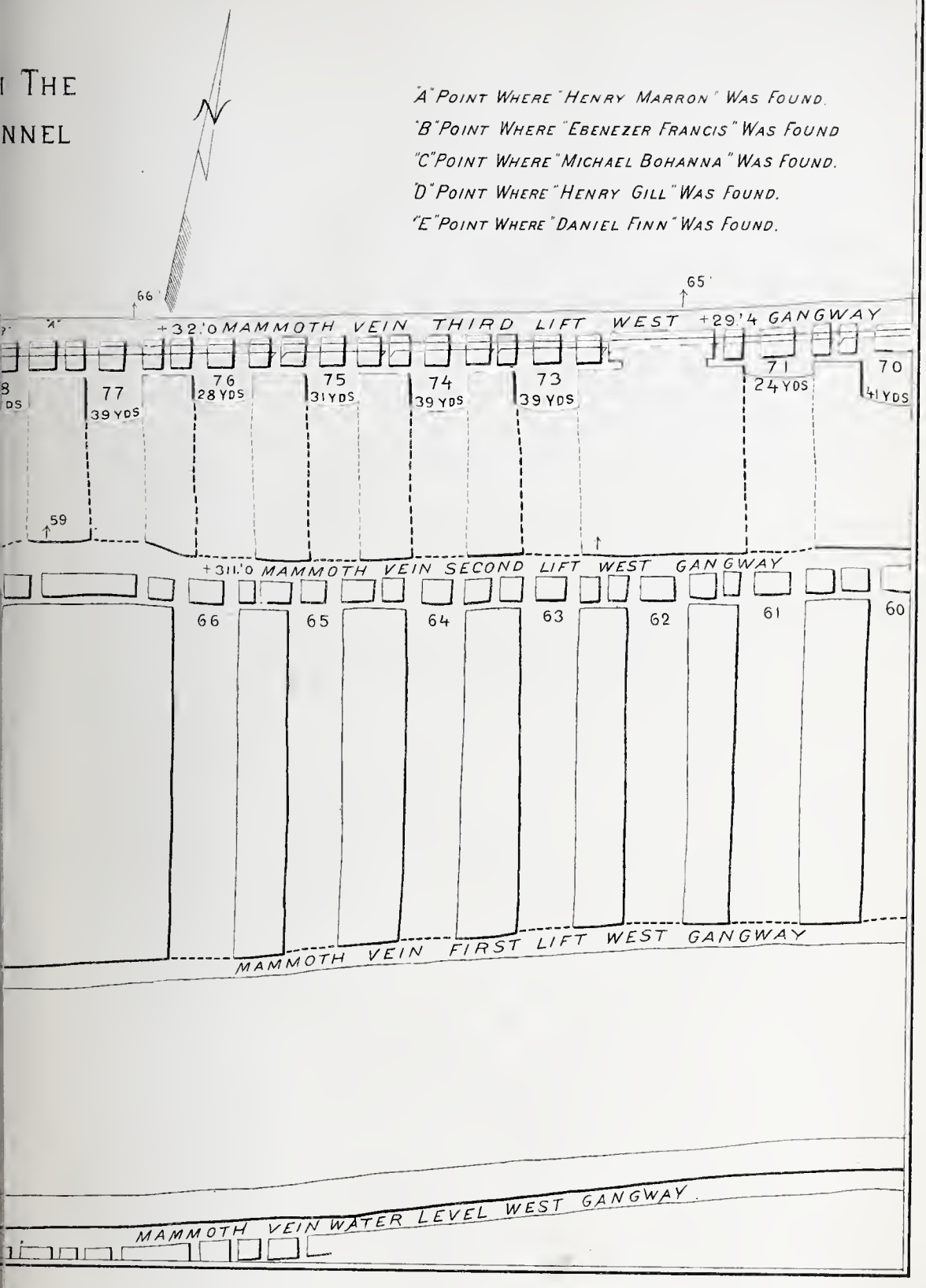
"A" Point Where "Henry Marron" Was Found.
"B" Point Where "Ebenezer Francis" Was Found
"C" Point Where "Michael Bohanna" Was Found.
"D" Point Where "Henry Gill" Was Found.
"E" Point Where "Daniel Finn" Was Found.
66
65
+32.'0 MAMMOTH VEIN THIRD LIFT WEST
+29'4 GANGWAY
77
39 YDS
76
28 YDS
75
31 YDS
74
39 YDS
73
39 YDS
71
24 YDS
70
41 YDS
59
+311.'0 MAMMOTH VEIN SECOND LIFT WEST GANGWAY
66
65
64
63
62
61
60
MAMMOTH VEIN FIRST LIFT WEST GANGWAY
MAMMOTH VEIN WATER LEVEL WEST GANGWAY.

TABLE No. 4.—List of fatal accidents occurring in and about the mines of the Sixth Anthracite Mine District for the year ended December 31, 1887.

Date of accident.	Name of Person.	Occupation.	Age.	Widow.	No. of children.	Name of Colliery.	Location.	Nature and Cause of Accident.
Jan. 3,	Thos. Thompson,	Miner,	36	1	3	Reliance,	Mt. Carmel, North'd co.,	Killed by a fall of bone coal.
Feb. 24,	Henry Nagle,	Starter,	23	..	..	Tunnel,	Ashland, Schuylkill county,	Suffocated by a rush of coal, dirt and water.
Mar. 14,	Patrick Maloney,	Miner,	21	..	..	Luke Fidler,	Shamokin, North'd county,	Killed by a fall of coal.
14,	Hugh Breslin,	Starter,	31	.	.	Belimon,	Conyngham twp , Col'bia co.,	Killed by an explosion of dualin powder.
22,	William Walter,	Miner,	49	1	9	Williamstown,	Williamstown, Dauphin co.,	Died from injuries received on the 12th by a fall of coal.
Apr. 5,	John S. Wert,	Chute boy,	16		.	Logan,	Centralia, Columbia county,	Died from injuries received same day by being caught in machinery.
27,	Henry Marron,	Loader,	28	1	.	Tunnel,	Ashland, Schuylkill county,	Suffocated by a sudden outburst of coal and C. H. gas.
27,	Ebenezer Francis,	do.	33			do.	do. do.	do. do. do. do.
27,	Mich'l Bohannon,	Miner,	25	1	2	do.	do. do.	do. do. do. do.
27,	Daniel Finn,	do.	35	1	7	do.	do. do.	do. do. do. do.
27,	Henry Gill,	Fire-boss,	41	1	5	do.	do. do.	do. do. do. do.
May 2,	Edward Miller,	Miner,	40	1	2	Reliance,	Mt. Carmel, North'd county,	Killed by a fall of top coal.
23,	James Doyle,	L. engineer,	32	1	4	Locust Spring,	Locust Gap, North'd county,	Died from injuries received on the 14th by being crushed between the bumpers of empty mine cars and locomotive boiler.
June 2,	Martin Deane,	Starter,	..	1	9	North Ashland,	Dark Corner, Columbia co.,	Killed by his head being caught between side of mine cars and low side of gangway leg.
23,	John Cook,	Ast.mineboss,	53	1	6	Lykens Valley,	Lykens, Dauphin county,	Suffocated by a rush of dirt, slate and rock.
25,	Adam Starkosa,	Miner,	37	1	2	Hickory Swamp,	Coal twp., North'd county,	Died from injuries received on the 18th by being burned by an explosion of carbureted hydrogen gas.
25,	Wm. H. Chaundy,	Laborer,	41	1	..	Peerless,	Shamokin, North'd county,	Died from injuries received May 27th while passing over a trestling with two other men, a mule and a small car of ashes the trestling fell, precipitating them a distance of twelve or fourteen feet.
July 13,	Charles Leader,	Miner,	45	1	2	Excelsior,	Excelsior, North'd county,	Killed by a fall of top coal.
20,	John Donahoe,	do.	40	1	6	Big Mine Run,	Big Mine Run, Schuylkill co.,	Killed by a fall of top coal.
23,	A. Lezezyneskie,	do.	25	.	..	Peerless,	Shamokin, North'd county,	Killed by a fall of top slate.
26,	Louis Marnenelli,	do.	41			Big Mountain,	do. do.	Killed by a fall of coal and top slate.
Aug. 3,	Michael Kutzko,	Out. laborer,	60	1	2	Burnside,	Coal twp., North'd county,	Killed by left arm being cut off and otherwise injured by being caught between wire rope and pulley.
5,	Albert Lockout,	Driver,	16			Big Mountain,	do. do.	Died from injuries received on June 20th by being caught between top of gangway and top of empty mine car.
13,	John Taylor,	Miner,	20			Lykens Valley,	Wiconisco, Dauphin county,	Killed by a fall of top rock.
20,	William Kline,	Carpenter,	42	1	2	Cameron,	Shamokin, North'd county,	Killed by falling from dump chute in breaker down on to dirt road, a distance of about forty-nine feet.

TABLE No. 4—Continued.

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Widow.	No. of children.	Name of Colliery.	Location.	Nature and Cause of Accident.
Aug. 23,	Richard Miller, .	Miner, ...	21	. .	. .	Pennsylvania, ...	Mt. Carmel twp., North'd co.,	Killed by a fall of top rock.
30,	Adam Rajas, . .	do. . . .	28	. .	. .	Morris Ridge, ...	Conyngham twp., Col'bia co.,	Died from injuries received July 20th while attempting to get up into his chute off gangway he fell back on gangway his head striking the gangway low side rail.
Sept. 14,	Geo. Kandridge,	Laborer, . . .	37	1	2	Lykens Valley, . . .	Wiconisco, Dauphin county,	Killed by a mine car door falling on him.
16,	Joseph Swadles, .	Miner, ...	28	.		Burnside, ...	Coal twp., North'd county, .	Killed by being caught between top of mine and chute.
19,	John Sylack, . .	do. . . .	34	1	3	Peerless, ...	Shamokin, North'd county, .	Killed by a fall of top slate.
23,	Stephen Yatka, .	Laborer, . .	26	1	. .	Big Mine Run, . . .	Big Mine Run, Schuylkill co.,	Killed by a fall of top coal (bone).
29,	John Lasoski,	do. . . .	27		.	Big Mountain, . . .	Coal twp., North'd county, .	Killed by a fall of top slate.
Oct. 1,	Fred. Oestrick, .	Fire-boss, . .	38	1	6	Bast, ...	Big Mine Run, Schuylkill co.,	Suffocated by carbureted hydrogen gas displaced by a fall of roof.
1,	John Corcoran, .	Starter, . .	34	. .	. .	do.	do. do.	Suffocated by carbureted hydrogen gas displaced by a fall of roof.
1,	John McDonnell,	Loader, . .	22	. .	. .	do.	do. do.	Suffocated by carbureted hydrogen gas displaced by a fall of roof.
1,	John Gillham, . .	Driver, ...	20	. .	. .	do.	do. do.	Suffocated by carbureted hydrogen gas displaced by a fall of roof.
1,	Patrick Cully, . .	Doorboy, . .	16	. .	. .	do.	do. do.	Suffocated by carbureted hydrogen gas displaced by a fall of roof.
1,	Patrick Monroe,	do. . .	17	. .	. .	Merriam, ...	Locust Summit, North'd co.,	Died from injuries received September 14th by being crushed between door-frame and side of mine car.
20,	Wladysl. Zubrus,	Laborer, . .	29	.	. .	Bellmon, ...	Conyngham twp., Col'bia co.,	Died from injuries received on the 18th by being crushed between mine car and side of gangway.
27,	James Sweeney, .	Miner, ...	26	. .	. .	Monitor, ...	Locust Gap, North'd county,	Killed by a fall of coal.
Nov. 1,	David B. Morgan,	do. . . .	27	1	1	Bellmon, ...	Conyngham twp., Col'bia co.,	Killed by being struck by a piece of timber while riding up slope.
4,	Frank Switka, .	do. . . .	31	. .	. .	Merriam, ...	Locust Summit, North'd co.,	Died from injuries received same day by a fall of partition stone.
7,	And. Schraedley,	Outside boss,	62	1	4	do.	do. do.	Killed by his head being crushed between the two main coal screen belts and pulley in breaker.
10,	W. S. Stricker, .	Miner, . . .	42	1	6	Nellson, ...	Shamokin, North'd co., . .	Died from injuries received same day by an explosion of powder.
10,	A. S. Stricker, .	Laborer, . .	17			do.	do. do. . .	Died from injuries same day by same explosion.
17,	Ter. McManus, .	Miner, . . .	26	1	2	do.	do. do. . . .	Died from injuries received on the 14th by falling down shaft a distance of about forty feet.
26,	John Bengle, . .	Laborer, .	32	1	3	Big Mine Run, . . .	Big Mine Run, Schuylkill co.,	Killed by a fall of roof.

29,	Henry Dahm,	Miner,	44	1	6	Merriam,	Locust Summit, North'd co.,	Died from injuries received on same day by a fall of top coal.
Dec. 1,	Peter Moran,	Starter,	38	1	5	North Franklin No. 2,	Trevorton, North'd county,	Killed by a rush of loose rock while inside of battery drilling a hole in a lump of rock.
19,	George Gillida,	Driver,	20			Big Mountain,	Coal twp., North'd county,	Died from injuries received same day by being crushed between empty mine cars and coal chute.
25,	Wm. Monaghan,	Out. driver,	20			Hazle Dell,	Centralia, Columbia county,	Died from injuries received on the 23d by being crushed between mule and loaded mine car.
31,	Charles Phillips,	Loader,	24			Logan,	do. do.	Killed by being crushed between a pole and chute prop while starting the coal in chute.

TABLE No. 5.—List of non-fatal accidents occurring in and about the mines of the Sixth Anthracite Mine District for the year ended December 31, 1887.

Date of accident.	NAME OF PERSON.	Occupation.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Jan. 10,	James Colston, . . .	Outside laborer, .	Big Mountain, ...	Northumberland co., ...	Head crushed by being caught between mine cars.
13,	David T. Evans, . . .	Miner, ...	Big Mine Run, ...	Schuylkill co., ...	Leg broken by a fall of coal.
14,	John Smegelskie, . .	do.	Burnside, ...	Northumberland co., ...	Ankle dislocated by a piece of coal falling on it.
15,	John Lewis, ...	Outside laborer, .	Williamstown, ...	Dauphin co., ...	First joint of third finger taken off by being caught in cogs of drill press in machine shop.
18,	Elmer Mench, ...	Miner, ...	Cameron, ...	Northumberland co., ...	Injured about shoulders by a fall of coal.
19,	Joseph Bergen, . . .	Slate-picker, . . .	Monitor, ...	do.	Arm broken by falling over a slate box while going from stove to his chute in breaker.
22,	George Stokes, . . .	Outside laborer, .	Preston No. 3, ...	Schuylkill co., ...	Scull fractured by being caught between mine cars.
29,	John Klinedine, . . .	Night watchman, .	Potts, ...	Columbia co., ...	Head and body bruised by falling off trestling about 20 feet.
Feb. 1,	Patrick Hemmesy, .	Miner, ...	Big Mountain, ...	Northumberland co., ...	Burned on face, neck and hands by explosion of C. H. gas.
1,	Martin Dalton, ...	Miner, ...	Big Mountain, ...	Northumberland co., ...	Burned on face, neck and hands by explosion of C. H. gas.
1,	Anthony Daniels, . .	Miner, ...	Morris Ridge, ...	Columbia co., ...	Burned by an explosion of a keg of powder.
4,	George Landon, . . .	Top of slope man,	Sterling.	Northumberland co., ...	Cut and bruised about arms and body by being run over by mine car.
5,	John Wilson, ...	Miner, ...	Tunnel, ...	Schuylkill co., ...	Injured by a fall of coal.
12,	James McLane, . . .	do.	Cameron, ...	Northumberland co., ...	Hurt by coal falling on him.
22,	John Conaky, ...	Loader, ...	Penusylvania, ...	do.	Hand badly hurt by being caught between a mine car and gangway leg; mine car jumped track.
23,	Edward Dolan, ...	Timber man, . . .	North Ashland, ...	Columbia co., ...	Shoulder hurt and ribs broken while riding down slope, a plank fell down slope from top, he jumped off car and was caught between car and center prop in slope.
28,	James Rowe, ...	Miner, ...	Williamstown, ...	Dauphin co., ...	Hurt on head while going up chute by a lump of coal striking him.
28,	David C. Davis, . . .	Laborer, ...	Burnside, ...	Northumberland co., ...	Arm broken by being struck with hammer while drilling a rock hole.
Mar. 1,	Alexander Clark, . .	Miner, ...	Hickory Swamp, ...	Northumberland co., ...	Small bone of leg broken between knee and instep by a fall of coal.
3,	M. Brenovitch, . . .	Loader, ...	Morris Ridge, ...	Columbia co., ...	Ankle sprained by being caught under top lever of dump chute inside in mine.

4,	Michael Corcoran, .	Miner, ...	Luke Fidler, ...	Northumberland co., ...	Injured by being run over by empty mine car No. 10 slope.
8,	Lewis Long, ...	Loader, ...	Bellmon, ...	Columbia co., ...	Leg broken by being kicked by a mule.
14,	John Felker, ...	Miner, ...	Pennsylvania, ...	Northumberland co., ...	Slightly burued by an explosion of C. H. gas.
14,	R. Zimmers, ...	do.	do.	do.	Slightly burned by an explosion of C. H. gas.
16,	Anthony McDonald, .	do.	Logan, ...	Columbia co., ...	Injured by a gangway collar falling on him.
16,	Roland Leacb, ...	do.	Locust Spring, ...	Northumberland co., ...	Injured on head and body by a fall of coal.
24,	Lewis Howard, . . .	. . . . .	Hickory Swamp, ...	do.	Injured by a fall of coal.
25,	Andrew Stork, ...	Laborer, ...	Hazle Dell, ...	Columbia co., ...	His two hands blown off and one eye blown out by an explosion of dualin caps while handling them.
31,	John Cassatt, ...	Miner, ...	Big Mountain, ...	Northumberland co., ...	Burned on hands and face by an explosion of C. H. gas.
April 2,	James Davis, ...	Doortender, ...	Preston No. 3, ...	Schuylkill co., ...	Injured on right leg by being run over by mine car.
2,	Anthony Cocochinas,	Miner, ...	Pennsylvania, ...	Northumberland co..	Injured by a fall of top coal.
6,	Rudolph Weaver, . .	Laborer, ...	Burnside, ...	do.	Shoulder dislocated by being caught between a mine car and prop.
6,	Paul Steiuer, ...	Miner, ...	Burnside, ...	Northumberland co., ...	Back and head injured by a fall of top coal.
14,	Michael Breslin, . . .	Dirt bankman, . .	Monitor, ...	do.	Leg broken by being run over by dirt dumper.
18,	Solomon Martin, . .	Miner, ...	Big Mountain, ...	do.	Injured on back and leg by a fall of top slate.
19,	James Romberger, .	Laborer, ...	Williamstown, ...	Danphin co., ...	Injured by being run over by mine car.
21,	John W. Boush, . . .	Carpenter, ...	Lykens Valley, ...	do.	Collar bone broken and injured internally by being caught in safety truck pit by safety truck on top of slope.
25,	Andrew Moleskey, . .	Loader, ...	Locust Spring, ...	Northumberland co., ...	Ribs fractured by being caught between mine cars and platform while uncoupling the cars.
26,	James McGuire, . . .	Miner, ...	Neilson, ...	Shamokin, Northumberland co.,	Slightly burned on hands, feet and neck by carbureted hydrogen gas.
27,	Johu Horan, ...	Miner, ...	Centralia, ...	Centralia, Columbia co., ...	Leg broken between knee and ankle by a lump of coal striking him while starting a battery.
27,	Isaac Hollis, ...	do.	Bear Valley, ...	Coal twp., Northumberland co.,	Leg broken by a fall of coal.
28,	John Burgand, . . .	Dirt bank driver, .	Locust Spring, ...	Locust Gap, Northumberland co.,	Leg cut and back injured; the mule ran away with dumper he slipped and fell under dumper.
29,	John Boyle, ...	Miner, ...	Pennsylvania, ...	Mt. Carmel twp., Northumb'd co.,	Burned on hands and face by carbureted bydrogen gas.
29,	Anthony Subis, . . .	Miner, ...	Pennsylvania, ...	Mt. Carmel twp., Northumb'd co.,	Burned on hands and face by carbureted hydrogen gas.
30,	John Eagan, ...	Starter, ...	Preston No. 3, ...	Girardville, Schuylkill co., . . .	Fracture of right collar bone while riding on front of a trip of mine cars, his shoulder was caught between top of car and top of tunnel.
May 4,	John Krapp, ...	Miner, ...	Big Mine Run, ...	Big Mine Run, Schuylkill co., . .	Hip seriously injured by a fall of coal.
4,	Charles Yodas, ...	do.	Pennsylvania, ...	Mt. Carmel twp., Northumb'd co.,	Injured by being squeezed between mine cars.
5,	Enoch Woliskie, . .	Miuer, ...	Mt. Carmel Shaft, ...	do. do.	Burned by an explosion of powder while making a cartridge, a spark from the lamp on his head fell iuto and exploded about half a keg powder.
7,	Constantine Flime, .	do.	Enterprise, ...	Coal twp., Northumberland co., .	Arm nearly cut off by a fall of top slate.
7,	Henry Yeager, ...	Dirt loader, ...	Locust Spring, ...	Locust Gap, Northumberland co.,	Rupture of a blood vessel by lifting a dirt dumper.
7,	James F. Rittinger, .	Slope man, ...	Short Mountain, ...	Wiconisco twp., Dauphin co., . .	Leg broken by a prop falling on him while lowering the load.
9,	John Hoover, ...	Miner, ...	Bear Valley, ...	Coal twp., Northumberland co., .	Arm brokeu and head cut; he fell wbile running away from a blast.

TABLE No. 5—Continued.

Date of accident.	Name of Person Injured.	Occupation.	Name of Colliery.	Location.	Nature and Cause of Accident.
May 10,	Isaac Evans, ...	Miner, ...	Neilson, ...	Shamokin, Northumberland co.,	Burned on face and hands by an explosion of powder while charging a hole, a spark from the lamp on his head fell into the powder.
10,	Alvin Snyder, ...	Miner, ...	Neilson, ...	Shamokin, Northumberland co.,	Burned on face and hands by same explosion that burned Evans.
18,	Frank Skoskie, . . .	Miner, ...	Neilson, ...	Shamokin, Northumberland co.,	Burned by a prematnre explosion or blast of powder.
26,	Richard Gavin, . .	Miner, ...	Bast, ...	Big Mine Run, Schuylkill co., . .	Leg broken and head cut by a fall of coal.
27,	John Kosloskie, . . .	Outside laborer, .	Peerless, ...	Shamokin, Northumberland co.,	Burned and injured about body by a trestling falling while he was passing over it with a car of hot ashes from boilers.
27,	Michael O'Neil, . . .	Outside laborer, .	Peerless, ...	Shamokin, Northumberland co.,	Injured about body by contusion caused by the falliug of trestling.
28,	Andrew Kane, ...	Miner, ...	Big Mountain, ...	Coal twp., Northumberland co.,	Hands and face burned by carbureted hydrogen gas; after firing a blast they both went up to face of breast with naked lights, leaving their safety lamp in the lower cross-heading.
28,	Anthony Wallange,	Miner, ...	Big Mountain, ...	Coal twp., Northumberland co.,	
June 3,	Joseph Wicosiokie, .	Miner, ...	Burnside, ...	Coal twp., Northumberland co.,	Leg broken by a fall of top slate.
4,	Herman Woller, . .	do.	Big Mine Run, ...	Big Mine Run, Schuylkill co., . .	Leg broken by a fall of partition slate.
4,	Robert Crawford, . .	Door boy, ...	Sterling, ...	Coal twp., Northumberland co.,	Leg broken in two places by being crushed between a buggy (small mine car) and prop.
8,	William Shekoskie, .	Miner, ...	Pennsylvania, ...	Mt. Carmel twp., Northumb'd co.,	Leg broken by a fall of top coal.
11,	Christian Connor, . .	Loader, ...	Hazle Dell, ...	Conyngham twp., Columbia co.,	Arm broken while uncoupling mine cars.
11,	John Petrosavage, .	Miner, ...	Pennsylvania, ...	Mt. Carmel twp., Northumb'd co.,	Seriously injured by the premature explosion of a blast.
14,	Joseph Dunlap, . . .	Miner, ...	Short Mountain & Lykens Valley,	Wiconisco twp., Dauphin co., . .	Thigh bone broken by a fall of coal.
17,	W. J. Jones, ...	Driver, ...	Luke Fidler, ...	Coal twp., Northumberland co.,	Leg broken by a mule falling on him.
18,	Thomas Bratchetaky,	Miner, ...	Hickory Swamp, ...	do. do.	Burned on hands, face and neck by C. H. gas.
18,	Edward Donahoe, . .	do.	Logan, ...	Conyngham twp., Columbia co.,	Ribs fractured while attempting to board a train of moving empty mine cars.
23,	John Polin, ...	Driver, ...	Williamstown, ...	Williamstown twp., Dauphin co.,	Burned on face, hands and body by an explosion of about half a keg of powder.
23,	David Holland, . . .	Laborer, ...	Short Mountain and Lykens Valley	Wiconisco twp., Dauphin co., . .	Injured by being caught under a rush of coal, slate and dirt out of chute on lower level East Lykens Valley slope level.

29,	Monroe Brubaker, .	Contractor, ...	North Franklin No. 2, ...	Trevorton, Northumberland co.,	Injured about body and cut on face by a fall of coal.
30,	Michael Bobish, . . .	Miner, ...	Neilson, ...	Shamokin, Northumberland co.,	Leg broken by a fall of top slate in No. 12 veiu, east gangway.
July 9,	Henry L. Renn, . . .	do.	Cameron, ...	do. do.	Burned on hands, face, neck and shoulder by C. H. gas.
12,	Edward O. Evans, . .	do.	do.	do. do.	Burned about the face by an explosion of C. H. gas out of drill hole.
16,	Andrew Subrinski, .	do.	Monitor, ...	Locust Gap Northumberland co.,	Thigh bone broken by a fall of coal.
16,	Edward Brennan, . .	do.	Williamstown, ...	Williamstown, Dauphin co., . . .	Severely injured about the head and body by a fall of coal.
19,	Frank Willard, . . .	Loader, ...	do.	do. do. . . .	Foot injured by door bar of mine car running into it.
20,	Frank Devitt, ...	Miner, ...	Sterling, ...	Coal twp., Northumberland co., .	Ruptured while moving some rock.
27,	Andrew Rooney, . .	do.	Hazle Dell, ...	Conyngham twp., Columbia co., .	Bone of wrist fractured by a prop falling on it.
27,	John Alecovitch, . .	Loader, ...	Logan, ...	do. do. .	Leg fractured by a level or pole falling on it while helping to put mine car on track.
27,	Frank Hacock, . . .	. . . . .	Pennsylvania, ...	Mt. Carmel twp., Northum'd co.,	Hip dislocated
30,	Jacob Trubley, . . .	Miner, ...	Big Mountain, ...	Coal twp., Northumberland co., .	Burned on hands and face by C. H. gas.
30,	A. F. Yocum, ...	do.	do.	do. do. .	Burned on hands and face by C. H. gas.
Aug. 5,	John Christ, ...	do.	Cameron, ...	Shamokin, Northumberland co., .	Leg broken by a fall of top coal.
5,	Patrick O'Niel, . . .	do.	Monitor, ...	Locust Gap, Northumberland co.,	Leg broken and two toes of right foot cut off by a fall of coal.
6,	John Fahringer, . . .	Laborer, ...	Centralia, ...	Centralia, Columbia co., ...	Injured about head and face by being crushed between mine car and chute.
8,	. . . . .	Miner, ...	Excelsior, ...	Coal twp., Northumberland co., .	Foot hurt by a fall of slate.
10,	Frank Sesco, ...	Laborer, ...	Henry Clay, ...	do. do. .	Head and breast injured by a collar falling on him.
20,	John Polinskii, . . .	Miner, ...	Alaska Shaft, ...	Mt. Carmel twp., Northum'd co.,	Burned by a premature blast.
22,	Michael Roland, . . .	Loader, ...	North Ashland, ...	Conyngham twp., Columbia co., .	Ankle mashed by being caught between a battery and coal.
23,	John Yarmoth, . . .	Laborer.	Hazle Dell, ...	do. do. .	Leg fractured by a fall of coal.
23,	Preston Fisher, . . .	Miner, ...	Bellman, ...	do. do. .	Injured by a fall of coal.
23,	Joel Lubold, ...	do.	do.	do. do. .	Injured by a fall of coal.
26,	Jesse Morris, ...	Driver, ...	Lykens Valley, ...	Wiconisco, Dauphin co., ...	Severely injured. He fell under loaded mine cars.
Sept. 2,	Patrick Haggerty, . .	Miner, ...	Locust Spring, ...	Locust Gap, Northumberland co.,	Head and back cut and bruised by a fall of rock.
7,	Paul Chillick, ...	do.	Excelsior, ...	Coal twp., Northumberland co., .	Leg broken by a fall of top slate.
12,	Walter Mathewson, .	do.	Big Mountain, ...	do. do. .	Leg broken by a fall of coal.
20,	Michael O'Donnell, .	Platform man, . .	Bast, ...	Big Mine Run, Schuylkill co., . .	Shoulder dislocated by slipping and falling on platform.
23,	Thomas Williams, . .	Miner, ...	Burnside, ...	Coal twp., Northumberland co., .	Injured about small of back by fall of top coal.
28,	Joseph Harris, . . .	Slate-picker, . . .	Henry Clay, ...	do. do. .	Elbow fractured. He fell coming from breaker.
29,	Patrick Sweeney, . .	Miner, ...	Tunnel, ...	Ashland, Schuylkill co., ...	Rib broken by falling down breast manway.
Oct. 4,	John Crevick, ...	do.	Neilson, ...	Shamokin, Northumberland co.,	Injured about the spiue by a fall of top slate.
6,	Hiram Malick, ...	do.	Williamstown, ...	Williamstown, Dauphin co., . . .	Injured about the head and back by a fall of coal.
7,	Peter Matulis, ...	do.	Pennsylvania, ...	Mt. Carmel twp., Northum'd co.,	Injured about the body by a fall of top slate.
7,	L. Martin, ...	Loader, ...	Peerless, ...	Shamokin, Northumberland co.,	Leg broken by beiug caught by mine car while running it.
7,	Lewis Williams, . . .	Door-boy, ...	Burnside, ...	Coal twp., Northumberland co., .	Head squeezed while uncoupling mine cars in motion.
13,	Victor Rissinger, . .	Loader, ...	Preston No. 3, ...	Girardville, Schuylkill co., . . .	Foot severely bruised while unloading a dumper.
20,	William Condell, . .	Miner, ...	Williamstown, ...	Williamstown, Dauphin co., . . .	Severely iujured about body by a fall of slate.
21,	Andrew Vasco, ...	do.	Lancaster, ...	Coal twp., Northumberland co., .	Burned by an explosion of a keg of powder while making a cartridge of powder.

TABLE No. 5—Continued.

Date of accident.	NAME OF PERSON INJURED.	Occupation.	Name of Colliery.	Location.	Nature and Cause of Accident.
Oct. 25,	Henry Chubb, ...	Outside laborer, .	Short Mountain and Lykens Valley	Wiconisco twp., Dauphin co., . .	Thigh bone broken by being struck by a piece of T rail while rolliug a boiler.
26,	William Cavanagh, .	Driver, ...	Williamstown, ...	Williamstown, Dauphiu co., . . .	Right arm injured by loaded cars running over it.
Nov. 11,	Michael Sevick, . . .	Miner, ...	Big Mountain, ...	Coal twp., Northumberland co., .	Rib broken by beiug caught between mine car and top rock.
11,	Charles Conrad, . . .	do.	do.	do. do. .	Slightly burued by C. H. gas. He went up to face of the coal breast without a safety lamp after firiug a blast.
12,	John Burke, ...	Laborer, ...	Preston No. 3, ...	Girardville, Schuylkill co., ...	Severe laceration of back of head, right ear torn off and contusion of the brain by a premature explosion of dynamite while blasting rock.
19,	Frank Marchinsky, .	Miner, ...	Hickory Swamp, ...	Coal twp., Northumberland co., .	Iujured by being struck with coal from blast while going down manway.
19,	John McNealis, . . .	Driver, ...	Bellmon, ...	Conyngham twp., Columbia co., .	Left arm broken at wrist, by beiug squeezed between mule and mine car.
21,	Daniel Gerrity, . . .	Laborer, ...	Morris Ridge, ...	do. do. .	Ankle broken. While carrying timber outside he slipped and fell.
21,	John Horan, ...	Starter, ...	Tunnel, ...	Ashland, Schuylkill co., ...	Arm broken by being caught between mine car and gangway collar.
26,	Jacob Graeff, ...	Laborer, ...	Bellmon, ...	Conyngham twp., Columbia co., .	Leg broken by a fall of slate while working in west gangway of south tunnel bottom vein.
30,	Johu Stanislaus, . . .	Miner, ...	Pennsylvania, ...	Mt. Carmel twp., Northum'd co.,	Badly hurt by falling down a chute iu No. 3 slope.
Dec. 2,	Frank Wesoloskii, . .	do.	Burnside, ...	Coal twp., Northumberland co., .	Knee fractured by falliug while going down his manway.
3,	William Rynard, . .	do.	Alaska Shaft, ...	Mt. Carmel twp., Northum'd co.,	Leg brokeu by a fall of boue coal.
7,	John Smith, ...	do.	Pennsylvania, ...	do. do.	Slightly burned by an explosion of C. H. gas.
7,	Charles Reybuck, . .	Driver, ...	Neilsou, ...	Shamokin, Northumberland co.,	Injured about face by being kicked by a mule.
8,	John Kelley, ...	Miner, ...	Logan, ...	Couyngham twp., Columbia co.,	Leg fractured by a fall of coal.
13,	Alfred Ruse, ...	Repairman, ...	Heury Clay, ...	Coal twp., Northumberland co., .	Abdomen injured forming an abcess, caused by being punctured by a nail.
14,	August Morgan, . . .	Miner, ...	Pennsylvania, ...	Mt. Carmel twp., Northum'd co.,	Slightly burned by an explosion of C. H. gas.
14,	Frauk Bogden, . . .	do.	do.	do. do.	Slightly burued by au explosiou of C. H. gas.

17,	Reuben Noll, ...	do.	Garfield, ...	Coal twp., Northumberland co., .	Severely burned by an explosion of a keg of powder. While making a cartridge a spark from his lamp fell into the powder.
22,	Enoch Sachpokli, . .	Driver, ...	Big Mountain, ...	Coal twp., Northumberland co., .	Collar bone broken by mine car jumping the track.
23,	William Davis, ...	Top of slope man,	Williamstown, ...	Williamstown, Dauphin co., . .	Arm crushed by mine car running over it.
30,	James Skelding, . . .	Miner, ...	Pennsylvania, ...	Mt. Carmel twp., Northum'd co.,	Burned on face, neck, arms and hands by an explosion of C. H. gas.

SEVENTH ANTHRACITE DISTRICT.

Hon. THOMAS J. STEWART,
Secretary of Internal Affairs:

SIR: I have the honor to submit herewith my thirteenth annual report as inspector of coal mines of the Seventh Anthracite district, in accordance with the requirements of act of Assembly, approved June 30, 1885.

The report contains the usual tables showing the number of fatal and non-fatal accidents. Also the output of coal for the year ending December 31, 1887.

It will be observed by the following tables that twenty persons lost their lives. Fifty-five per cent. of these casualties resulted from falls of coal and rock, whilst fifteen per cent. resulted from explosions of blasting material. Hence it will be seen that seventy per cent. of the list of fatal accidents resulted from two causes, viz: Falls of roof and coal, and through the reckless handling of explosives by the victims themselves. This is an increase over the preceding year, from the same sources, of twenty-eight per cent.

Forty-two persons were seriously injured by various causes. Thirty-three per cent. of the list resulted from falls and explosives.

Yours truly,

SAMUEL GAY, *Inspector.*

POTTSVILLE, *March 1, 1888.*

TABLE No. 1.—Comparative Statement of Fatal Casualties Occurring During the Years of 1886 and 1887.

CAUSE OF ACCIDENTS.	YEARS.	
	1886.	1887.
Explosions of fire-damp,	....	1
Falls of coal and roof,	5	11
Crushed by mine cars,	....	1
By machinery on the surface,	1	1
Falling down slopes,	1	....
Breaking of ropes or chains,	2	....
Explosions of blasting material,	4	3
Miscellaneous causes,	8	3
Totals,	21	20

TABLE No. 2.—Number of Fatal Accidents and Amount of Coal Produced per Life Lost by the Different Companies.

	Number of fatal accidents.	Amount of coal produced per life lost.
Philadelphia and Reading Coal and Iron Company,	13	99,688
Lehigh Coal and Navigation,	6	58,002
Alliance Coal Mining Company,	....	127,480
Individual firms,	1	526,077

TABLE No. 3.—Non-Fatal Accidents—Comparative Statement of Non-Fatal Casualties Occurring During the Years 1886 and 1887.

CAUSE OF ACCIDENTS.	YEARS.	
	1886.	1887.
Explosions of fire-damp,	3	5
Falls of coal and roof,	16	14
By mine cars,	4	10
By machinery on the surface,	....	1
By machinery underground,	....	1
Falling down slopes,	1	....
Explosions of blasting material,	6	2
Miscellaneous,	13	8
	43	42

TABLE No. 4.—Table Showing the Total Amount of Coal Shipped, Together with the Estimated Amount Used and Sold at the Collieries.

	YEARS.	
	1886.	1887.
Amount of coal shipped,	2,335,862	2,298,509
Used at the collieries,	141,517	137,790
Total of tons produced,	2,476,013	2,436,299

TABLE No. 5.—Showing a Comparison Between the Years 1886 and 1887 Respectively.

	Years.	
	1886.	1887.
Number of persons employed,	8,075	8,207
Number of tons of coal produced per life lost,	117,905	121,814
Ratio of employés per life lost,	384	410.35
Number of tons produced per each person seriously injured,	57,349	58,007
Tons of coal produced per employé,		296.75

TABLE No. 6.—Showing Number of Deaths and Ratio Thereof per every Thousand Employees of the Different Companies and Individual Firms for the Year 1887.

	Number of employés.	Number of deaths.	Number of deaths per thousand employés.
Philadelphia and Reading Coal and Iron Company,	4,642	13	....
Lehigh Coal and Navigation Company,	1,546	6	....
Alliance Coal Mining Company,	594	....	....
Individual firms,	1,425	1	....
Totals,	8,207	20	$2\frac{435}{1000}$

Condition of Collieries.

The general condition of the mines in the district, we are pleased to say, is steadily being improved; especially the ventilation, and we are of the opinion that if the workmen themselves would be more careful in handling explosives, and pay a little more attention to the condition of the roof and sides under which they work, the number of accidents would be very much reduced. And it is from the workmen themselves that we must look for relief from that class of accidents that average from fifty to seventy per cent. of the total list of fatal and non-fatal accidents.

TABLE No. 1.—Showing location of collieries in the Seventh Anthracite Mine District.

NAME OF COLLIERY.	Name of Operator.	Location—County.	Name of Superintendent.	Post-Office Address.
Brookside,	Philadelphia and Reading Coal and Iron Company,	Tower City, Schuylkill county,	John Veeth,	Pottsville.
Kalmia,	do. do. do.	do. do.	do.	do.
East Franklin,	do. do. do.	Upper Raush Creek, do.	do.	do.
Middle Creek Shaft,	do. do. do.	Middle Creek, do.	do.	do.
Otto,	do. do. do.	Branchdale, do.	do.	do.
Phenix Park No. 3,	do. do. do.	Phenix Park, do.	do.	do.
Beachwood,	do. do. do.	Mount Laffe, do.	do.	do.
Glendower,	do. do. do.	Taylorsville, do.	do.	do.
Taylorsville,	do. do. do.	do. do.	do.	do.
Eagle,	do. do. do.	Saint Clair, do.	do.	do.
Eagle Hill,	do. do. do.	Eagle Hill, do.	do.	do.
Pine Forest,	do. do. do.	Saint Clair, do.	do.	do.
Richardson,	do. do. do.	Glencarbon, do.	do.	do.
Thomaston,	do. do. do.	Thomaston, do.	do.	do.
Old Lincoln,	do. do. do.	Lorberry, do.	do.	do.
Lehigh No. 8,	Lehigh Coal and Navigation Company,	Coal Dale, do.	W. D. Zehner,	Lansford, Carbon county.
Lehigh No. 12,	do. do.	do. do.	do.	do. do.
Lehigh No. 10,	do. do.	do. do.	do.	do. do.
Lehigh No. 11,	do. do.	do. do.	do.	do. do.
Kaskawilliam,	do. do.	Middleport, do.	do.	do. do.
Palmer Vein,	do. do.	New Philadelphia, do.	do.	do. do.
New Boston,	Mill Creek Coal Company,	New Boston, do.	T. D. Jones,	Mahanoy City.
Herbin,	I. K. Segfried,	Minersville, do.		Pottsville.
Ellsworth,	John R. Davis,	New Castle, do.	John H. Davis,	Broad Mountain P. O.
Cryston,	Sowder & Brady,	do. do.	do.	do. do.
Schuylkill,	Quinn & Wemms,	do. do.	John Quinn,	St. Clair.
Vulcan,	George Johns & Co.,	Wadesville, do.	Thomas Edwards,	do.
Monitor,	I. Dennings & Bros.,	do. do.	Joseph Dennings,	do.
Hoocker,	Maurey & Co.,	St. Clair, do.	John A. Dutter,	do.
Chamberlin,	Thompson, Heatt & Co.,	do. do.	Daniel Thompson,	do.
New Town.				
Keckline,	R. O. Connors,	Thomaston, do.	Thomas O'Connor,	Heckscherville.
Pine Dale,	Slemmer & Co.,	Middleport, do.	Mark Bowman,	Middleport.
Millford,	Docker & Co.,	do. do.	do.	do.
Diamond,	John Lawerence,	Minersville, do.	John Lawerence,	Minersville.
Greenwood No. 13,	Thomas Oliver,	Tamaqua, do.	Thomas Oliver,	Tamaqua.
East Lehigh,	Mitchell & Shepp,	do. do.	Joseph Mitchell,	do.
West Lehigh,	Peter Young & Co.,	do. do.	Peter Young,	do.

TABLE No. 2.—Gives the total number of tons of coal mined and tons of coke produced in each colliery, number of days worked, number of employés, number of persons killed and injured, number of kegs of powder used, &c., in the Seventh Anthracite District for the year ending December 31, 1887.

NAMES OF COLLIERIES.	Location—Schuylkill county.	Total production in tons of coal.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.
Middle Creek shaft,	Middle Creek,		109,154	250	437			2,650	20	42
Phenix Park No. 3,	Phenix Park,		59,860	243	346			1,150	14	30
Thomaston,	Thomaston,		140,396	244	512		2	5,350	28	71
Otto,	Branchdale,		53,718	96	401		3	1,050	32	11
Eagle,	St. Clair,		40,662	233	148		1	550	6	13
Glendower,	Taylorsville,		78,819	232	396			1,900	21	41
Kalmia,	Tower City,		2,423	9	138			275	8	
Beachwood,	Mount Loffe,		70,986	233	309		4	1,350	16	25
Lincoln,	Keffers,		112,754	249	413		1	2,775	24	53
Richardson,	Glencarbon,		111,499	239	216			1,200	29	34
West Brookside,	Tower City,		312,817	273	712		1	3,200	40	116
Taylorsville,	Taylorsville,								12	
Eagle Hill,	Eagle Hill,		203,861	257	641		1	3,850	26	49
Lehigh No. 8,	Coal Dale,		93,413	179	445		8	180	37	56
Lehigh No. 10,	do.		121,029	183	419		1	1,080	36	52
Lehigh No. 11,	do.		70,834	164	406		1	840	13	48
Lehigh No. 12,	do.		62,736	154	256		1	1,380	12	25
Kaskawilliam,	Middleport,		122,072	189	566			2,397		44
Palmer Vein,	New Philadelphia,		5,408		28			85		13
New Lincoln,	Keffers,		148,278	267	348			1 755	20	29
New Boston,	Mahanoy,		231,000	249	459			5,435	44	
Herbine,	Minersville,		38,913	275	153			1,238	4	10
Lehigh No. 13,	Tamaqua,		22,135	209	71			217	2	7
Ellsworth,	New Castle,,		12,282	269	27			270	2	5
Hooker,	St. Clair,		13,646	250	64			300	2	8
Crystal,	New Castle,		9,596		35			242	2	7
East Lehigh,	Tamaqua,		4,157	160	25			120	1	4
Schuylkill Valley,	New Castle,		3,706	163	26			135	2	1

TABLE No. 2.—Continued.

NAMES OF COLLIERIES.	Location—Schuylkill county.	Total production in tons of coal.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.
Kicklene,	Thomaston,	.....	2,225	126	15	...	...	126	1	4
West Lehigh,	Tamaqua,	.....	14,219	239	40	...	...	180	1	4
Denning & Brother,	Wadesville,	.....	4,471	204	20	...	...	117	2	4
Vulcan,	do.	.....	10,026	160	56	...	...	481	4	5
Chamberlin,	St. Clair,	.....	7,793	102	75	...	...	300	4	2
Diamond,	Minersville,	.....	3,600	295	11	...	...	72	...	3
Altomont,	Broad Mountain,	.....	.....	.....	80	...	...	.....	...	...
Stout Coal Company,	New Boston,	.....	.....	.....	35	...	...	.....	...	...
Sold and consumed at collieries,		137,790	.....	.....	.....	...	...	.....	...	...
		2,436,299	2,298,509	5,523	8,207	20	42	3,628	...	716

TABLE No. 4—List of fatal accidents occurring in and about the mines of the Seventh Anthracite District for the year ended December 31, 1887.

Date of accident.	Name of Person.	Occupation.	Age.	Widow.	No. of orphans.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Jan. 5,	Michael Govell,	Slate picker,	13			Lehigh No. 12,	Schuylkill,	Caught in breaker machinery.
14,	John Coll,	Laborer,	24			Lehigh No. 8,	do.	Head crushed between two cars.
24,	Oliver Welsh,	Repairsman,	56	Yes,		Thomaston,	do.	Fatally injured by a piece of coal thrown from a blast.
Feb. 2,	Edward Dunkin,	Laborer,	20			Eagle Hill,	do.	Killed by a fall of slate.
17,	Griffiths Davis,	Miner,	38	Yes,	3	Lehigh No. 8,	do.	Died from the effects of being burned by an explosion of gas.
Mar. 16,	James Connors,	do.	26	Yes,		Beeehwood,	do,	Fatally injured by a fall of coal.
Apr. 1,	Evan Davis,	do.	26	Yes,	3	Lehigh No. 8,	do.	Killed by the premature explosion of a blast.
May 14,	Edward Phillips,	do.				Beechwood,	do.	Died from the effects of injuries received by a fall of coal.
17,	Martin Brenan,	do.	63	Yes,		do.	do.	Died from the effects of injuries received by a fall of coal,
25,	Jenkins Jenkins,	do.	63			Otto,	do.	Killed by a fall of slate.
25,	James Price,	Sinker,	27	Yes,	6	Lehigh No. 11,	do.	Killed by a fall of rock.
June 22	John Monlon,	Laborer,	25			Beechwood,	do.	Killed by a fall of slate.
July 12,	Edward Ferguson,	do.	20			Otto,	do.	Killed by falling down a slope.
Sept. 3,	Thomas Wilding,	Miner,	47	Yes,	7	Lehigh No. 10,	do.	Killed by a fall of coal.
28,	Michael Quinn,	Repairsman,	40	Yes,	11	Thomaston,	do.	Died from being struck by coal from a blast.
Oct. 14,	Albert Yohe,	Miner,	24	Yes,	3	Brookside,	do.	Died from a fall of slate.
25,	James Mitchell,	do.				Eagle,	do.	Killed by a fall of coal.
Nov. 1,	Moses Thornton,	do.			1	Chamberlin,	do.	Killed by a mine car.
Dec. 7,	Thomas Malley,	Laborer,				Otto,	do.	Killed by a fall of slate.
12,	Charles Keimcle,	Miner,				Old Lincoln,	do.	Killed by a fall of slate.

TABLE No. 5—List of non-fatal accidents occurring in and about the mines of the Seventh Anthracite District for the year ended December 31, 1887.

Date of accident.	NAME OF PERSON.	Occupation.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Feb. 8,	John Adams,	Miner,	Lehigh No. 10,	Schuylkill,	Bruised about the body and arm broken.
8,	Isaac Patrick,	do.	Brookside,	do.	Leg broken; struck by a piece of coal.
18,	Levi Teller,	Topman,	New Lincoln,	do.	Hand injured by a car.
18,	Harry Zimmerman,	Miner,	do.	do.	Leg bruised by a piece of coal.
18,	Daniel Griffith,	do.	Lehigh No. 8,	do.	Slightly burned by an explosion of gas.
17,	John Curran,	Fire boss,	Glendower,	do.	Slightly burned by an explosion of gas.
17,	James Edwards,	Miner,	do.	do.	Severely burned by an explosion of gas.
17,	Frank Wolbeson,	do.		do.	Slightly burned by an explosion of gas.
23,	William Shaw,	Laborer,	Lehigh No. 10,	do.	Leg broken by a piece of timber.
Mar. 25,	Alfred Jerimla,	Miner,	Kaskawilliam,	do.	Slightly burned by an explosion of gas.
26,	John James,	do.	Phœnix Park No. 3,	do.	Back and hips injured by fall of slate.
26,	William Engle,	Slate picker,	New Lincoln,	do.	Thigh broken by being struck by a dirt dumper.
Apr. 7,	John Derr,	Miner,	Middle Creek Shaft,	do.	Thigh broken by a fall of slate.
25,	Patrick Ryan,	do.	Richardson,	do.	Leg broken by a fall of coal.
May 13,	Patrick McKenna,	Laborer,	Eagle Hill,	do.	Leg broken by a prop falling on him.
17,	John Malley,	Miner,	Glendower,	do.	Severely injured by a premature explosion of a blast.
17,	Fritz Kenner,	Driver,	Greenwood No. 13,	do.	Lost his leg by falling under a mine car.
June 1,	Ed. Hady,	Bottom man,	New Boston,	do.	Leg broken by a mine car.
1,	Ben Evans,	Miner,	Crystal,	do.	Injured by falling down a manway.
10,	Ed. Stapleton,		Kaskawilliam,	do.	Severely injured by an explosion.
10,	John Roan,		do.	do.	
10,	James McGowan,		do.	do.	
19,	John Adams,		Lehigh No. 10,	do.	Foot injured by being caught between pieces of coal.
July 7,	Phil Bellinger,	Miner,	Otto,	do.	Arm broken and leg injured by a fall of coal.
8,	Marlen Koupsky,	Laborer,	Kaskawilliam,	do.	Back sprained by falling from a car.
20,	Alex. McDonald,	Slate picker,	do.	do.	Wrist broken and finger mashed.
25,	Andrew Bobender,	Laborer,	New Boston,	do.	Injured by a fall of slate.
Aug. 1,	John Bergen,	Miner,	Glendower,	do.	Injured by a fall of coal.
5,	James Tracy,	do.	Richardson,	do.	Injured by an explosion.
17,	William Lawrence,	do.	do.	do.	Leg broken by a fall of slate.
23,	Eber Jones,	do.	Herbine,	do.	Seriously injured in the back by a fall of slate.
27,	James Murry,	do.	Eagle,	do.	Cut and bruised about the head.
31,	John Clemson,	do.	New Boston,	do.	Injured by a fall of roof.
31,	Michael Gumbush,	Laborer,	do.	do.	Injured by a fall of roof.

Sept. 23,	August Litzman,	do.	Brookside,	do.	Rib broken by being struck by a sprag.
Oct. 6,	Michael Mahalg,	Car runner,	New Boston,	do.	Hip injured by being caught between cars.
15,	George Bohr,	Driver,	Old Lincoln,	do.	Arm broken by falling from a dirt car.
18,	Joseph Clemans,	do.	New Lincoln,	do.	Jaw broken by being struck by a mule spreader.
22,	Morgan Koup,	Laborer,	Altamont,	do.	Ribs fractured by being struck by a pump.
Nov. 5,	Michael Bailey,	do.	Eagle,	do.	Bruised about body by being caught by cars.
9,	John Shadel,	Miner,	New Lincolu,	do.	Thigh broken by a fall of coal.
11,	John Cummings,		Eagle Hill,	do.	Arm broken by a piece of coal.
11,	John Redding,	Laborer,	Brookside,	do.	Hurt about the body by a prop falling on him.
24,	John Turk,	do.	Thomaston,	do.	Collar bone fractured by a rush of coal.
Dec. 5,	James Stevens,	Miner,	Brookside,	do.	Rib fractured by falling down a chute.
20,	Ed. Keathing,	Door boy,	Eagle Hill,	do.	Leg broken by being caught between cars.
20,	John Gallagher,	Miner,	Herbine,	do.	Severely injured by a fall of slate.
27,	Jonathan Heberlin,	Driver,	New Lincoln,	do.	Injured by a mule falling on him.
28,	John Reitz,	Laborer,	Brookside,	do.	Leg broken by being caught by cars.

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